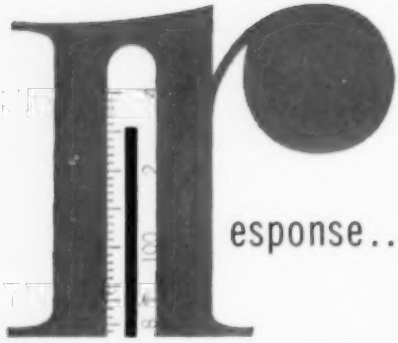
Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

VOL 81 1953 NO. 5



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GANTRICILLIN *'Roche'*

Gantrisin plus Penicillin

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response . . . rapid
a synergistic antibacterial combination prompts a higher and faster rate of therapeutic action than obtainable by either component alone.

resistance . . . rare
combined therapy of sulfonamide plus antibiotic minimizes emergence of resistant organisms.

GANTRICILLIN-500. Each tablet provides 0.5 Gm Gantrisin (the single, highly soluble sulfonamide) plus 500,000 units of crystalline penicillin G potassium.

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GANTRICILLIN (acetyl)-200. Each teaspoonful (5 cc) of the cherry-flavored suspension provides 0.5 Gm Gantrisin (acetyl) plus 200,000 units of penicillin G potassium.

GANTRICILLIN®; GANTRISIN®—brand of sulfisoxazole (3,4-dimethyl-5-sulfanilamido-isoxazole)
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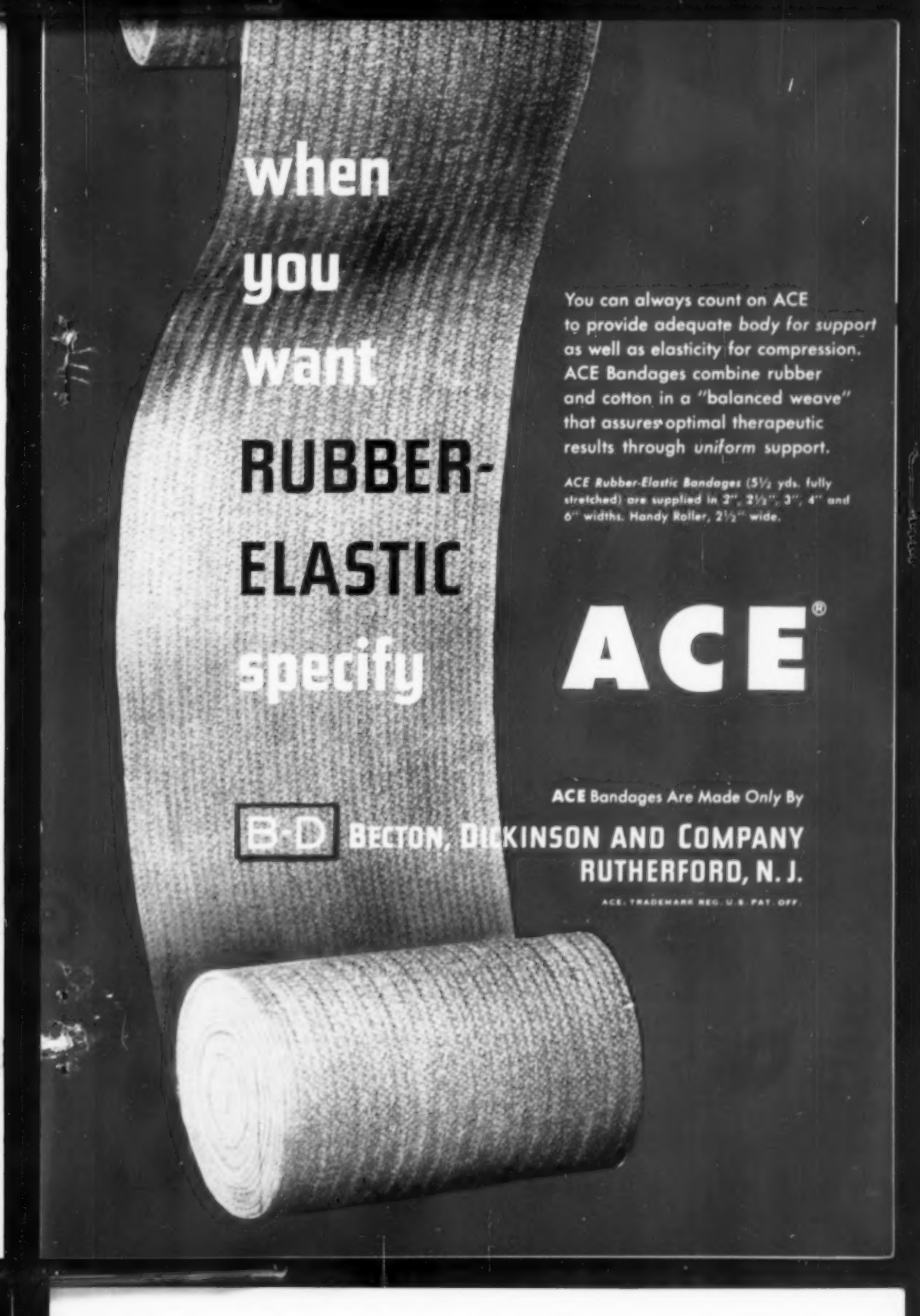
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You can always count on ACE to provide adequate *body for support* as well as elasticity for compression. ACE Bandages combine rubber and cotton in a "balanced weave" that assures optimal therapeutic results through *uniform* support.
ACE Rubber-Elastic Bandages (5½ yds. fully stretched) are supplied in 2", 2½", 3", 4" and 6" widths. Handy Roller, 2½" wide.
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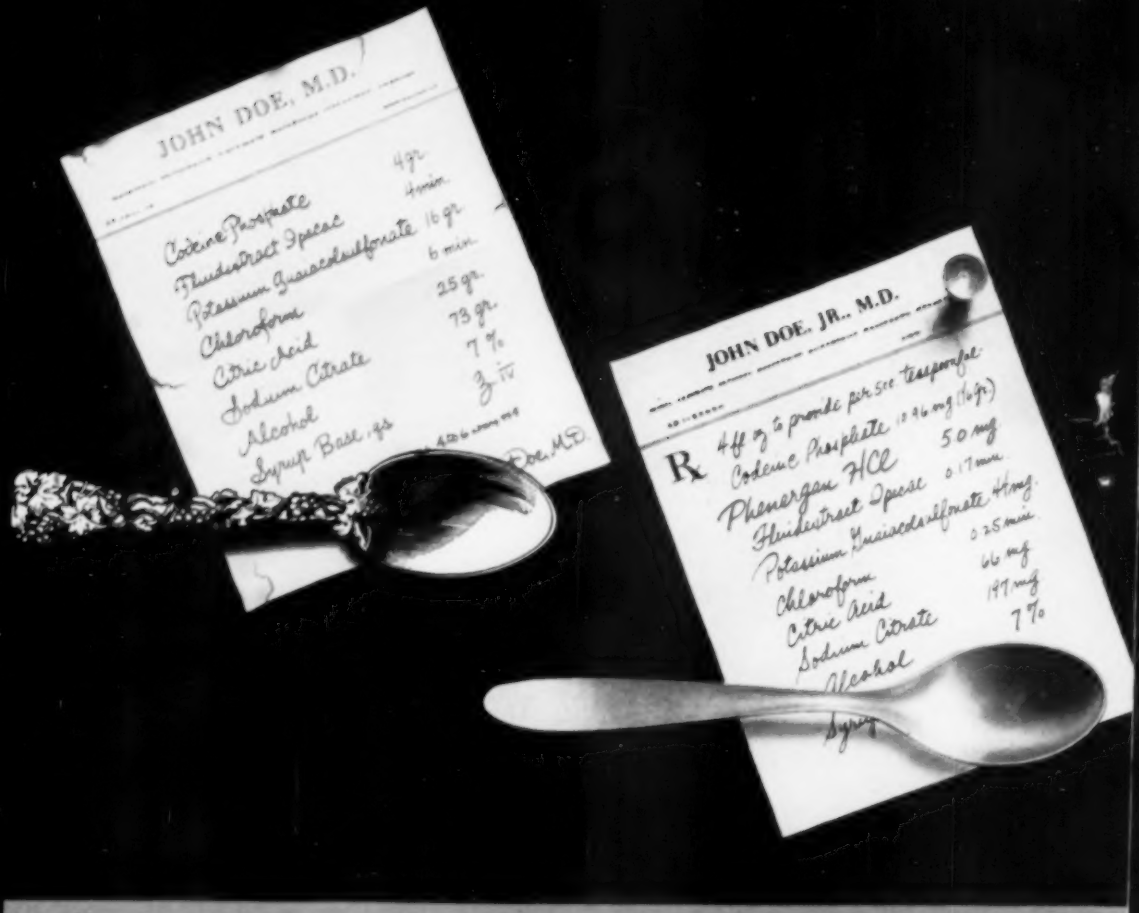

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FOR COUGH CONTROL

PHENERGAN Expectorant—the *modernized* sedative-expectorant prescription—offers the actions of PHENERGAN, ". . . most efficacious and longest acting [antihistaminic] drug."[1] The therapeutic, highly beneficial actions accruing from the PHENERGAN include topical anesthetic action more powerful than that of cocaine; antihistaminic action which helps control cough, bronchiolar spasm, and allergy-caused congestion; sedative action which may make "cough patients"—especially children—less irritable in general.

1. Peshkin, M. M., and others: Ann. Allergy 9:727 (Nov.-Dec.) 1951

Wyeth
Philadelphia 2, Pa.

PHENERGAN® EXPECTORANT

Promethazine Expectorant

with Codeine/Plain (without Codeine)

CONTENTS

BPA

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BETTER TOLERATED SALICYLATE THERAPY

For Headache, Neuralgia, Minor Aches and Pains
Give BUFFERIN® because...

1. It gives fast pain relief—acts twice as fast as aspirin.[1]
2. Even large doses seldom cause gastric upsets.[2]

For Arthritis—and Other Rheumatic Disorders
Give BUFFERIN because...

1. It provides effective, better-tolerated relief of pain.
2. There were no gastric upsets with BUFFERIN in 70% of hospitalized arthritic patients who couldn't tolerate aspirin.[3] This is an important finding, for arthritics are 3 to 9 times as susceptible to gastric upsets with straight aspirin as the general population.[3]
3. The antacids in BUFFERIN do not lower the blood salicylate levels as sodium bicarbonate does.[4]

BUFFERIN contains acetylsalicylic acid (5 gr. per tablet), for prompt analgesia, plus magnesium carbonate and aluminum glycinate.

Available—bottles of 12, 36, 60 and 100 tablets.

References: 1. J. Am. Pharm. Assoc., Sc. Ed. 39:21 (Jan.) 1950. 2. Ind. Med. 20:480 (Oct.) 1951. 3. In Press. 4. J.A.M.A. 141:124 (Sept. 10) 1949.

WHENEVER SALICYLATE THERAPY IS INDICATED
GIVE BUFFERIN® Acts Twice as Fast as Aspirin Does Not Upset the Stomach

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visceral eutonic

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PLAIN AND WITH PHENOBARBITAL

relieves gastroduodenal, biliary pain⇄spasm usually in ten minutes

eutonic: abolishes **pain⇄spasm** without interfering with normal tonus or motility

unusually well tolerated: free from "antispasmodic" side effects and does not affect gastric and biliary secretion

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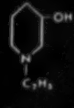

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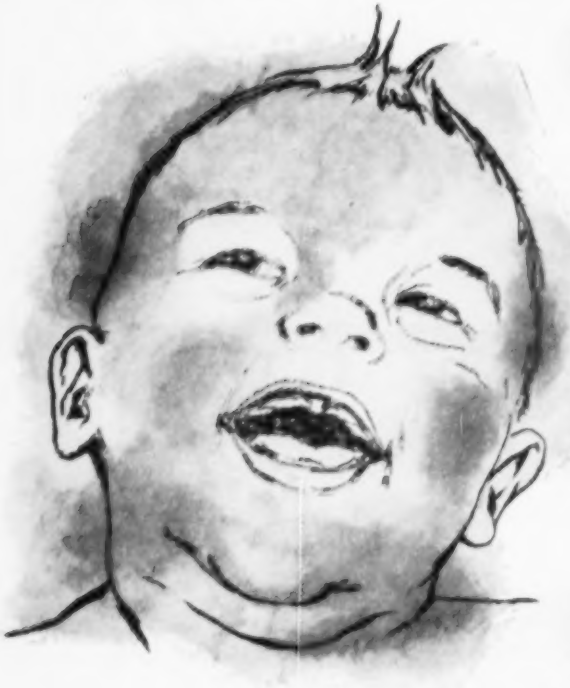

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EFFECTIVE

Over 96 per cent live delivery in 1200 patients . . . *Including 540 habitual aborters.*[1]

SAFE

No side effects in pregnant patients . . . *in either low or massive dosage.*[2]

COMPREHENSIVE

A Formulation Proved By Extensive Clinical Experience,[1, 2, 3, 4]

— Each **desplex** tablet contains 25 mg. of rapid-acting *ultra*-micronized diethylstilbestrol U.S.P., with protective and effectuating amounts of vitamin B complex and vitamin C.

— For further information and a generous trial supply of **desplex**, write to:

FRANK L. HALEY, M.D. — Medical Director

Grant Chemical Co., Inc.

New York 10, N. Y.

REFERENCES

1. Peña, E. F.: Med. Times 82:921, 1954; Am. J. Surg. 87:95, 1954
2. Kornaky, K. J.: South. M. J.: 45:1166, 1952
3. Gitman, L. and Koplowitz, A.: N. Y. St. J. Med. 50:2823, 1950
4. Ross, J. W.: J. Nat. M. Assoc. 43:20, 1951; 45:223, 1953

Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

Incorporating the Long Island Medical Journal and Western Medical Times

CONTRIBUTIONS Exclusive Publication: Articles are accepted for publication with the understanding that they are contributed solely to this publication, are of practical value to the general practitioner and do not contain references to drugs, synthetic or otherwise, except under the following conditions: 1. The chemical and not the trade name must be used, provided that no obscurity results and scientific purpose is not badly served. 2. The substance must not stand disapproved in the American Medical Association's annual publication, New and Nonofficial Remedies. When possible, two copies of manuscript should be submitted. Drawings or photographs are especially desired and the publishers will have half tones or line cuts made without expense to the authors. Reprints will be supplied authors below cost.

broad spectrum antibiotic of choice

STECLIN

SQUIBB TETRACYCLINE

promptly reaches high levels in the urine

crosses the intact meningeal barrier more readily than the other broad spectrum antibiotics

produces higher blood levels than the other broad spectrum antibiotics

less gastrointestinal side effects than the other broad spectrum antibiotics

Minimum adult dose: 250 mg. q.i.d.
250 mg. capsules, bottles of 16 and 100.
50 and 100 mg. capsules, bottles of 25 and 100.

SQUIBB

'STECLIN' IS A SQUIBB TRADEMARK

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Off the Record . . .

True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

Refresher Course

A schoolmarm went to the office of an associate who was always very intent and much to the point about his work. Wishing to display her knowledge of anatomy, when asked of her complaint she said, "Why doctor, I've had a very sore VULVA for several days." Before she could realize it, she found herself on the table in the old *lithotomy* position, and almost examined. Grabbing her dress quickly and protesting loudly, she pointed to her mouth and said, "No, no—it's up here!" After a hearty chuckle, the doc admonished her to either review her anatomical terms or stick to lay language.

C. V. R., M.D.
Anderson, Ind.

Needle for Needle

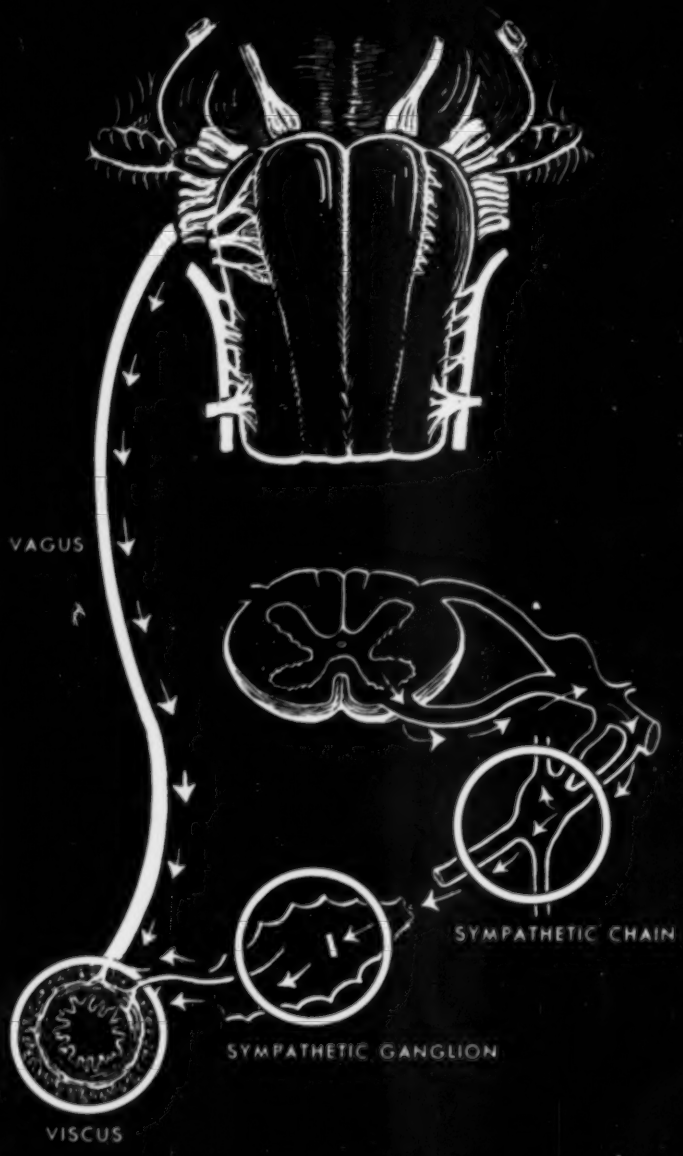
About eight years ago, shortly after we began giving penicillin in oil intramuscularly into the buttocks, I had an interesting experience with a five-year-old boy. He didn't appreciate the procedure at all, though he was brave and didn't cry. When I had finished he looked up at me in all seriousness and said, "Some day I'm going to get a needle and stick it in your hind-end," I really believe he meant it, and sure I lost a little friend.

H. J. J., M.D.
Washington, D. C.

A Real Paint Job

I opened an office with a class-mate in 1922. One of his first patients was an acute G. C. urethritis. My friend had just heard about an "abortive treatment", so he filled the urethra with a strong solution of Protargol and told the patient to hold the meatus closed for 10 minutes. After a few leaky failures, Doc had a bright idea. He re-fueled and plugged the meatus with cotton and painted the glands with collodion. The patient leaped up with a yell and vented his spleen on my pal and his urethra on our newly kalsomined wall. The paint repair job was

—Concluded on page 18a



Sites at which Pro-Banthine inhibits excess autonomic stimuli through control of acetylcholine mediation.

PRO-BANTHINE® FOR ANTICHOLINERGIC ACTION

Combined Neuro-Effector and Ganglion Inhibitor

Pro-Banthine consistently controls gastrointestinal hypermotility and spasm and the attendant symptoms.

Pro-Banthine is an improved anticholinergic compound. Its unique pharmacologic properties are a decided advance in the control of the most common symptoms of smooth muscle spasm in all segments of the gastrointestinal tract.

By controlling excess motility of the gastrointestinal tract, Pro-Banthine has found wide use[1] in the treatment of peptic ulcer, functional diarrheas, regional enteritis and ulcerative colitis. It is also valuable in the treatment of pylorospasm and spasm of the sphincter of Oddi.

Roback and Beal[2] found that Pro-Banthine orally was an "inhibitor of spontaneous and histamine-stimulated gastric secretion" which "resulted in marked and prolonged inhibition of the motility of the stomach, jejunum, and colon. . . ."

Therapy with Pro-Banthine is remarkably free from reactions associated with parasympathetic inhibition. Dryness of the mouth and blurred vision are much less common with Pro-Banthine than with any other potent anticholinergic agent.

In Roback and Beal's[2] series "Side effects were almost entirely absent in single doses of 30 or 40 mg. . . ."

Pro-Banthine (β-diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is available in three dosage forms: sugar-coated tablets of 15 mg.; sugar-coated tablets of 15 mg. of Pro-Banthine with 15 mg. of phenobarbital, for use when anxiety and tension are complicating factors; ampuls of 30 mg., for more rapid effects and in instances when oral medication is impractical or impossible.

For the average patient one tablet of Pro-Banthine (15 mg.) with each meal and two tablets (30 mg.) at bedtime will be adequate. G. D. Searle & Co., Research in the Service of Medicine.

---

1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.
2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

SEARLE

—Concluded from page 15a

on Doc but the Protargol was on the house!

E. W. S. M. D.
Portland, Ore.

Per Os

During November 1940 I was visiting a young couple at their home. Mr. ——— was ill with a painful quinsy and a rather high fever. After prescribing some medication sulfanilamide and Empirin with Codein, I inquired as to his bowel habits. He replied he had been, and was constipated, and I suggested an enema of soda and salt. I explained how to fix it and then said, "you put it into an enema bag and you try to take the entire amount if possible or as much as you can to wash out the bowel." I asked his wife if she would help him and if she understood the directions. She replied that she did. I left with the statement I would see him again on the next morning and would lance the abscess if it was ready.

Next morning I returned and found the patient improved and when I inquired about the results of the enema he replied, "My bowels moved good several times but that was an awful lot of water to drink through that tube and nozzle."

F. W. R., M.D.
Louisville, Ky.


WHEN THE BODY IS TORTURED

AND WRACKED WITH PAIN . . .

sodium-free salicylate therapy with little likelihood of electrolyte imbalance

ACTYLATE

TRADEMARK

(Activated Triple Salicylates)

ACTYLATE* Tablets provide, in coacting association, the analgesic and antirheumatic properties of ammonium, potassium, and strontium salicylates, plus the salicylate *potentiators*, para-aminobenzoic acid and vitamin C. Para-aminobenzoic acid also exerts a buffering action in the stomach, thus enhancing the toleration of ACTYLATE's triple salicylate combination.

Features

- ACTYLATE rapidly provides *full* salicylate benefit for sustained periods with reduced likelihood of electrolyte imbalance which may follow the administration of a single salicylate.
- ACTYLATE permits antirheumatic treatment with smaller doses of adrenocortical hormone.
- ACTYLATE contains *no sodium*, thus avoiding undesired complications in patients on low-sodium diets.

Each ACTYLATE Tablet contains:

Ammonium Salicylate	80 mg. (1⅓ gr.)
Potassium Salicylate	80 mg. (1⅓ gr.)
Strontium Salicylate	80 mg. (1⅓ gr.)
Para-Aminobenzoic Acid	250 mg. (4 gr.)
Ascorbic Acid	20 mg. (⅓ gr.)

ACTYLATE is available in bottles of 100 tablets through leading prescription pharmacies.

Samples to physicians on request

KINNEY & COMPANY, INC.

Columbus, Indiana

*Trademark of Kinney & Co., Inc.

Areas of Clinical Study / One of a Series

ANEMIA

accompanying or following infection

The "low-grade" anemia which so often accompanies or follows infection in children or adults, often is complicated by depressed bone-marrow function.[1]

Cobalt appears to be the only known agent which can be used to stimulate the hemopoietic function of bone-marrow.

RONCOVITE (*the original clinically proved pure cobalt-iron product*) *provides the long-missing factor in the treatment of both iron-deficiency and "chronic low-grade" (secondary) anemia. The presence of cobalt may actually "force" the utilization of iron*[2] *where bone-marrow inhibition is present.*

Extensive clinical evidence documents both the hemopoietic effectiveness and safety of Roncovite.

Clinical Proof—
in Chronic Low-Grade Anemia

"REFRACTORY ANEMIA"

"With cobalt, an effective therapy for anemia accompanying infection is possible."[3]

CHRONIC SUPPURATIVE INFECTION

"In all patients a reticulocytosis was observed within 6 days. This was followed by increases in red-cell counts, in hemoglobin values, in blood volume and in total circulating hemoglobin."[4]

POST-INFECTION ANEMIA

Excellent results[5] have been reported in post-infection anemia.

RONCOVITE

The original, clinically proved,
pure *cobalt-iron product.*

SUPPLIED:

RONCOVITE TABLETS
Each enteric coated, red tablet contains:
Cobalt chloride..... 15 mg.
Ferrous sulfate exsiccated..... 0.2 Gm.
Bottles of 100

RONCOVITE-OB
Each enteric coated, red capsule-shaped tablet contains:
Cobalt chloride..... 15 mg.
Ferrous sulfate..... 0.2 Gm.
Calcium lactate..... 0.9 Gm.
Vitamin D..... 250 units
Bottles of 100

RONCOVITE DROPS
Each 0.6 cc. (10 drops) provides:
Cobalt chloride (Cobalt 9.9 mg.)..... 40 mg.
Ferrous sulfate..... 75 mg.
Bottles of 15 cc. with calibrated dropper.

DOSAGE:

One tablet after each meal and at bedtime. Children 1 year or over, 0.6 cc. (10 drops); infants less than 1 year, 0.3 cc. (5 drops) once daily diluted with water, milk, fruit or vegetable juice.

1. Wintrobe, M. M.: Clinical Hematology, Philadelphia, Lea & Febiger, 1951, p. 419.
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3. Weissbecker, L.: Dtsch. M. Wschr. *75*:116 (1950).
4. Robinson, J. C., et al.: The New England J. M. *24*:749 (1949).
5. Weissbecker, L., and Maurer, R.: Klin. Wchnschr. *24-25*:855 (1947).

Bibliography of 192 references available on request.

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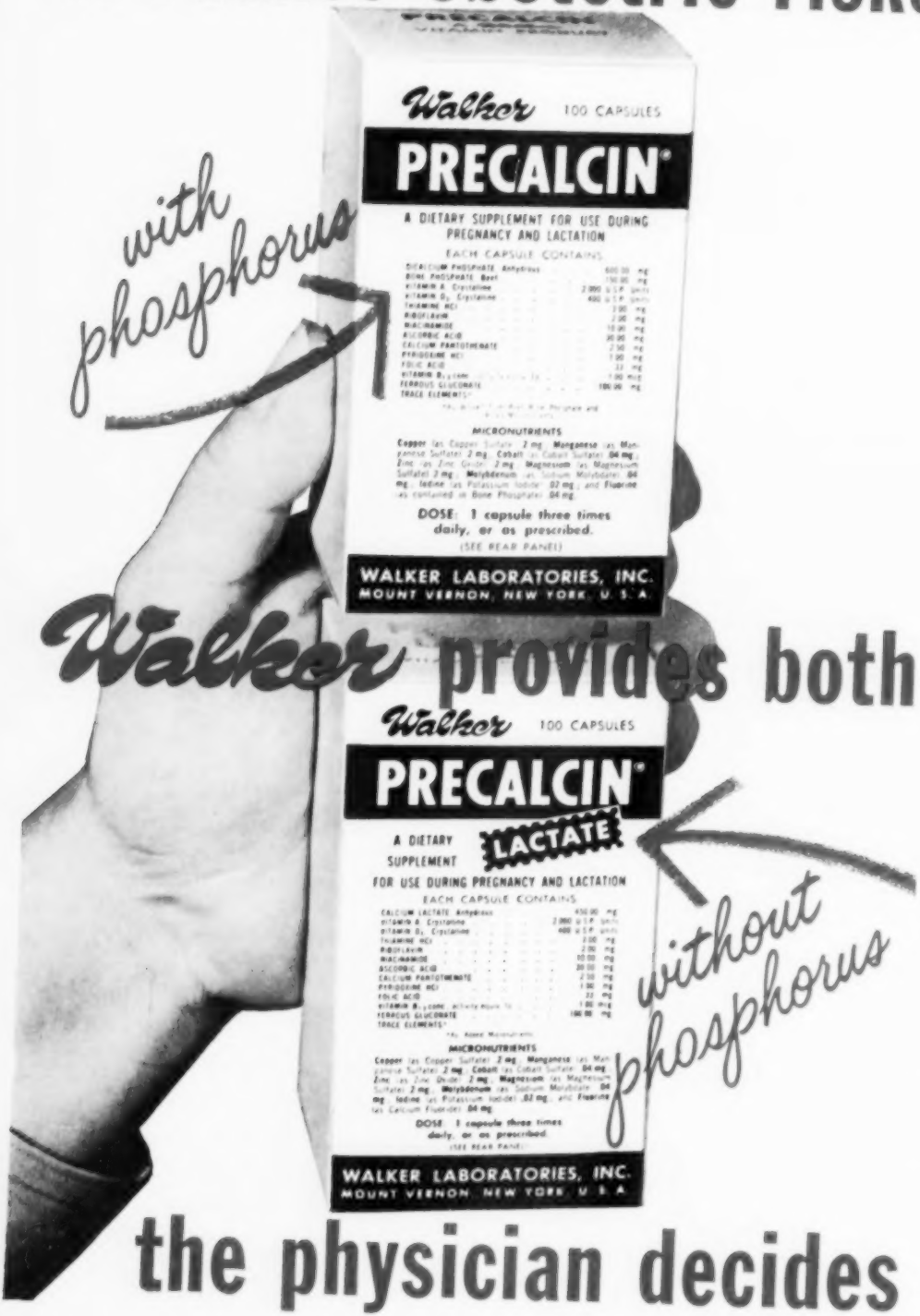
Since 1870

to reduce obstetric risks



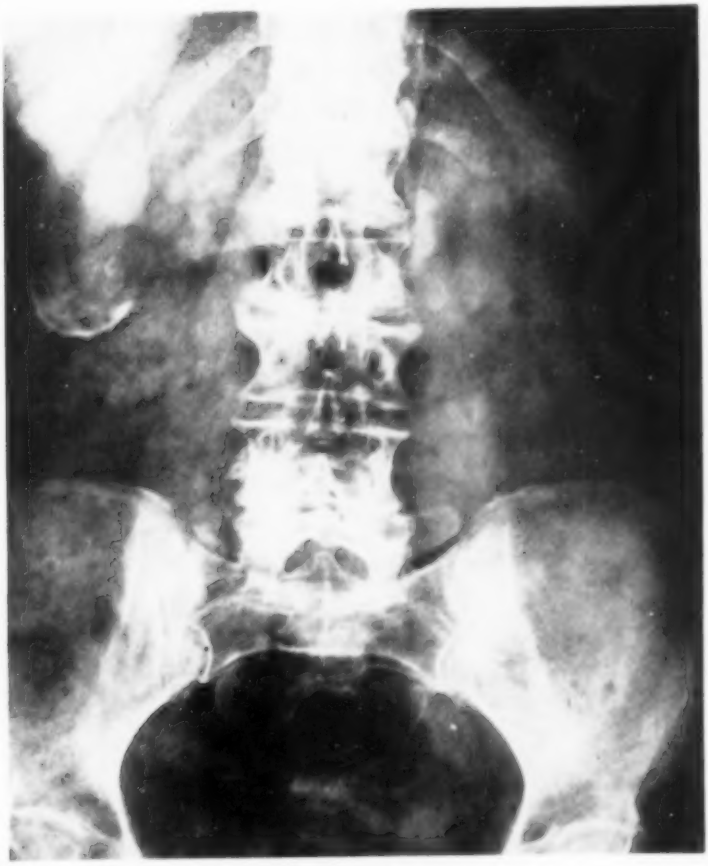
the physician decides

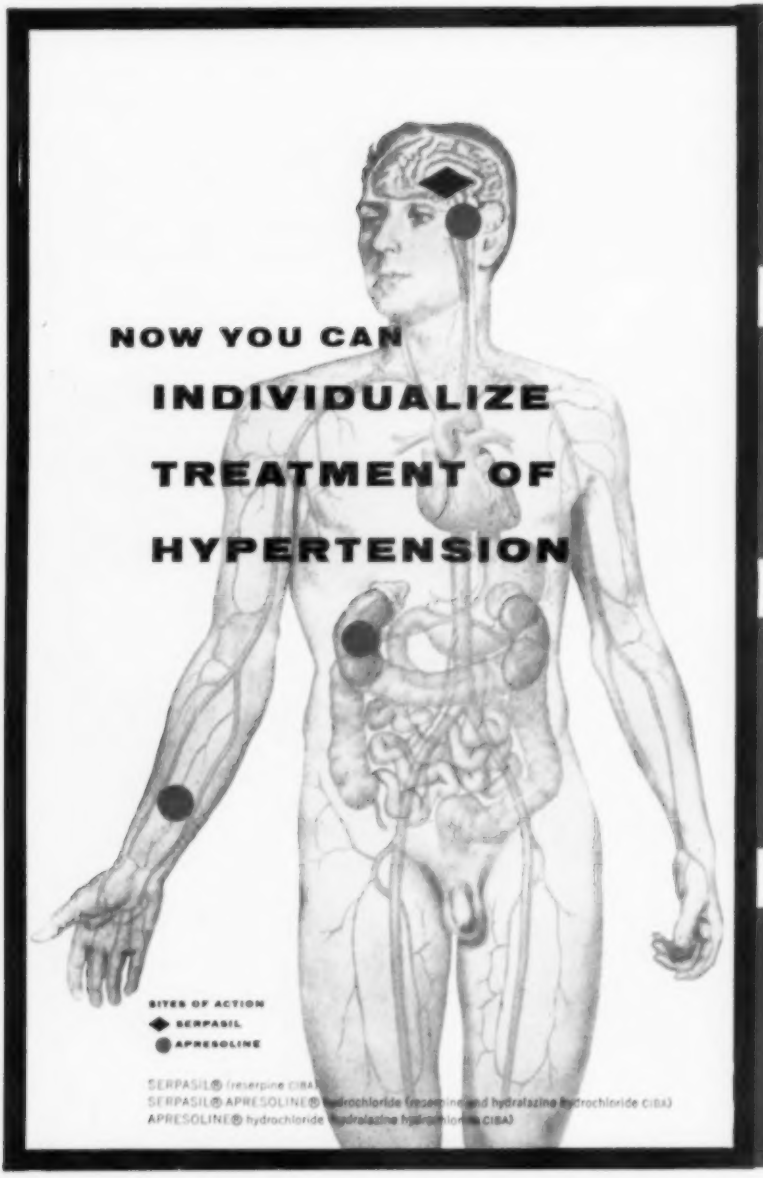
Diagnosis, Please!

WHICH IS *YOUR* DIAGNOSIS?

1. Artefact
2. Gallbladder stones
3. Milk of calcium bile
4. Calcified gallbladder wall

(ANSWER ON PAGE 110a)

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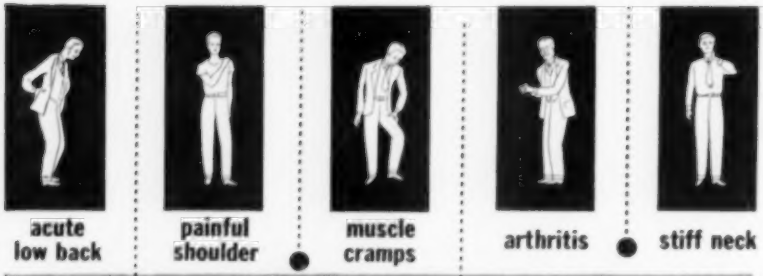
SITES OF ACTION
SERPASIL
APRESOLINE



to help **more** of your **patients**
with **rheumatic pain** and **spasm**
move, work, live in greater comfort

Mephosal®

3 dosage forms of **Mephosal**

Mephosal capsules – broad-range rheumatic analgesic for general use – each, mephenesin 250 mg., sodium salicylate 250 mg. Dose: 1 or 2 capsules.

Mephosal tablets c HMB – for cases associated with gastrointestinal disorders – each, mephenesin 125 mg., sodium salicylate 125 mg., homatropine methylbromide 1.25 mg. Dose: 2 or 3 tablets.

Mephosal elixir c HMB – also for cases with g.i. disturbance – each teaspoonful (4 cc.), mephenesin 400 mg., sodium salicylate 400 mg., homatropine methylbromide 2.5 mg. Dose: 1 teaspoonful.

Give every 3 or 4 hours, after meals or with a little milk.

relaxant mephenesin "solubilized" by **analgesic** sodium salicylate

The mephenesin in **Mephosal** is made *freely soluble** – and *more rapidly available to relax muscle spasm* – by sodium salicylate, *potent reliever of rheumatic pain*. You can be sure of *more predictable*, greater relief in more rheumatic patients as **Mephosal** breaks the vicious cycle of pain-spasm-more pain more effectively. Anticipate more comfort-in-motion, more freedom from disablement.

send for **samples** today

CROOKES LABORATORIES, INC.
Therapeutic Preparations for the Medical Profession
MINEOLA, NEW YORK

Crookes

**Patent applied for*

Coroner's Corner

The Missing Missile

The body of an adult male was brought to the Coroner's Office with the information that the deceased had been pursuing another man when he stumbled and fell. A gun in his hand went off, and he died instantly, apparently the victim of a bullet which had entered his chest. The police found a revolver in his right hand with one recently-fired cartridge under the hammer. A round skin perforation was found on the anterior aspect of the victim's chest. A paraffin test on the right hand was positive for nitrites.

At the Coroner's Office, examination of the body and clothing of the deceased revealed several facts which did not harmonize with the story obtained by the police, namely:

1. There was no burn or powder mark on the shirt of the victim;

2. The skin of the parasternal region near the wound showed no charring or powder fouling, and the perforation itself lacked the rim of abrasion characteristic of gunshot entrance wounds;

3. No exit wound was seen, and no bullet was found by visual, or manual search, or by X-ray examination.

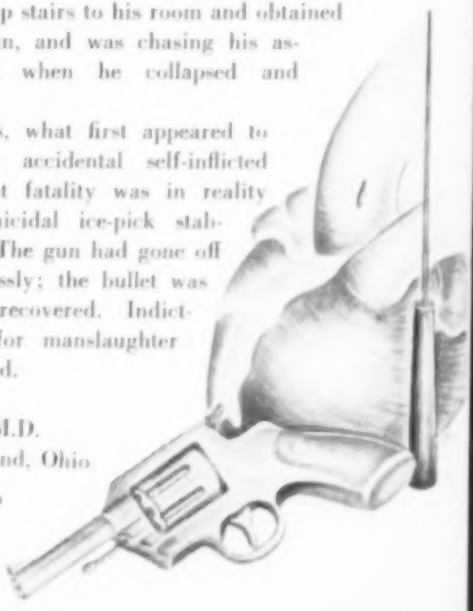
4. Death was due to cardiac tamponade secondary to perforation of the ascending aorta. However, the wound in the aorta appeared to have been made by a sharp instrument rather than by the passage of a bullet.

5. Two additional small penetrating wounds, several inches in depth, were found on the anterior aspect of the left shoulder. These lesions had not been previously noted.

In the light of these findings, the police were obliged to re-investigate the case. Further questioning of witnesses revealed that the victim and the man whom he had been pursuing had been engaged in an altercation on the sidewalk, and the victim had been stabbed three times with an ice pick. He then went up stairs to his room and obtained the gun, and was chasing his assailant when he collapsed and died.

Thus, what first appeared to be an accidental self-inflicted gunshot fatality was in reality a homicidal ice-pick stabbing. The gun had gone off harmlessly; the bullet was never recovered. Indictment for manslaughter followed.

L.A., M.D.
Cleveland, Ohio



In a planned search for more effective substances without undesirable actions, two new crystalline corticosteroids have been discovered in Schering's research laboratories.

Possessing three to five times the therapeutic effectiveness of cortisone or hydrocortisone in rheumatoid arthritis and other so called collagen diseases, METICORTEN* and METICORTELONE* are strikingly devoid of undesirable side actions, particularly sodium retention and excessive potassium depletion. Patients treated with these new steroids do not exhibit fluid retention, and sedimentation rate is lowered even where cortisone ceases to be effective—"cortisone escape." These new compounds afford better relief of pain, swelling and tenderness, diminish joint stiffness and are effective in small dosage.

.....*and* METICORTELONE

METACORTANDRALONE SCHERING

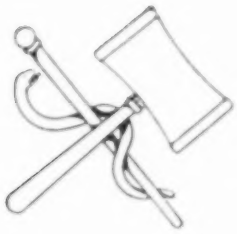
METICORTELONE, which resembles METICORTEN in clinical effect, is now being studied and will be available as soon as possible. The therapeutic properties of both drugs are being studied in other fields of therapy.

The first of these, METICORTEN, is being made available as 5 mg. tablets, bottles of 30. In the treatment of rheumatoid arthritis, dosage of METICORTEN begins with an average of 20-30 mg. a day. This is gradually reduced by 5 mg. until maintenance dosage of 5-20 mg. is reached, usually by the 14th day. The average maintenance dose is 5-10 mg. a day. The total 24-hour dose should be divided into 4 parts and administered *after meals and at bed time*. Patients may be transferred directly from hydrocortisone or cortisone to METICORTEN without difficulty.

SCHERING CORPORATION • BLOOMFIELD, N. J.

SCHERING

*T.M. Schering



What's Your Verdict?

Edited by Asa Piccirich, Member of the Bar of New Jersey

The young woman attended the local hospital for treatment to a lesion on the side of her nose. The hospital technicians applied their KX-10 x-ray machine for such treatment. In the course of one of the x-ray applications, while the patient was lying face upward on the table, the head of the machine, weighing some forty pounds, separated from the counterbalancing weight and struck the patient. She consequently suffered serious injuries to the eye and jaw, and instituted an action for compensation against the hospital, the doctor in charge of its x-ray department, and the manufacturer of the machine.

Subsequent examination of the machine disclosed that but one clamp fastened the counterbalancing weight to the cable with which the head of the machine was raised and lowered. The specifications called for two clamps for proper attachment and security.

The hospital contended that it was not negligent, but that the manufacturer failed to construct a machine free of defects, and failed to inspect the machine for defects prior to delivery.

The manufacturer submitted evidence of its elaborate quality control system in the manufacture of its products, and its rigid inspection program prior to and after assembly of a machine. The absence of one clamp was not discovered until three years after delivery of the machine, the manufacturer maintains, and constant usage would tend to loosen the clamps.

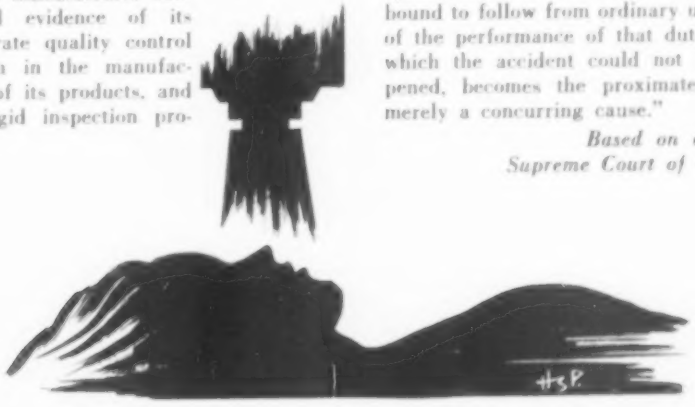
Further evidence adduced by the plaintiff showed that for three years machine had been in daily use under the exclusive control of the hospital, sometimes for as many as six treatments a day. During this period, the machine had never been inspected for defects or been given an overhauling of any kind, though an inspection would have taken less than thirty minutes.

The jury returned a verdict in plaintiff's favor against the hospital and its doctor in charge in the sum of $4,355. The manufacturer was left "scot-free." On appeal, how would you decide?

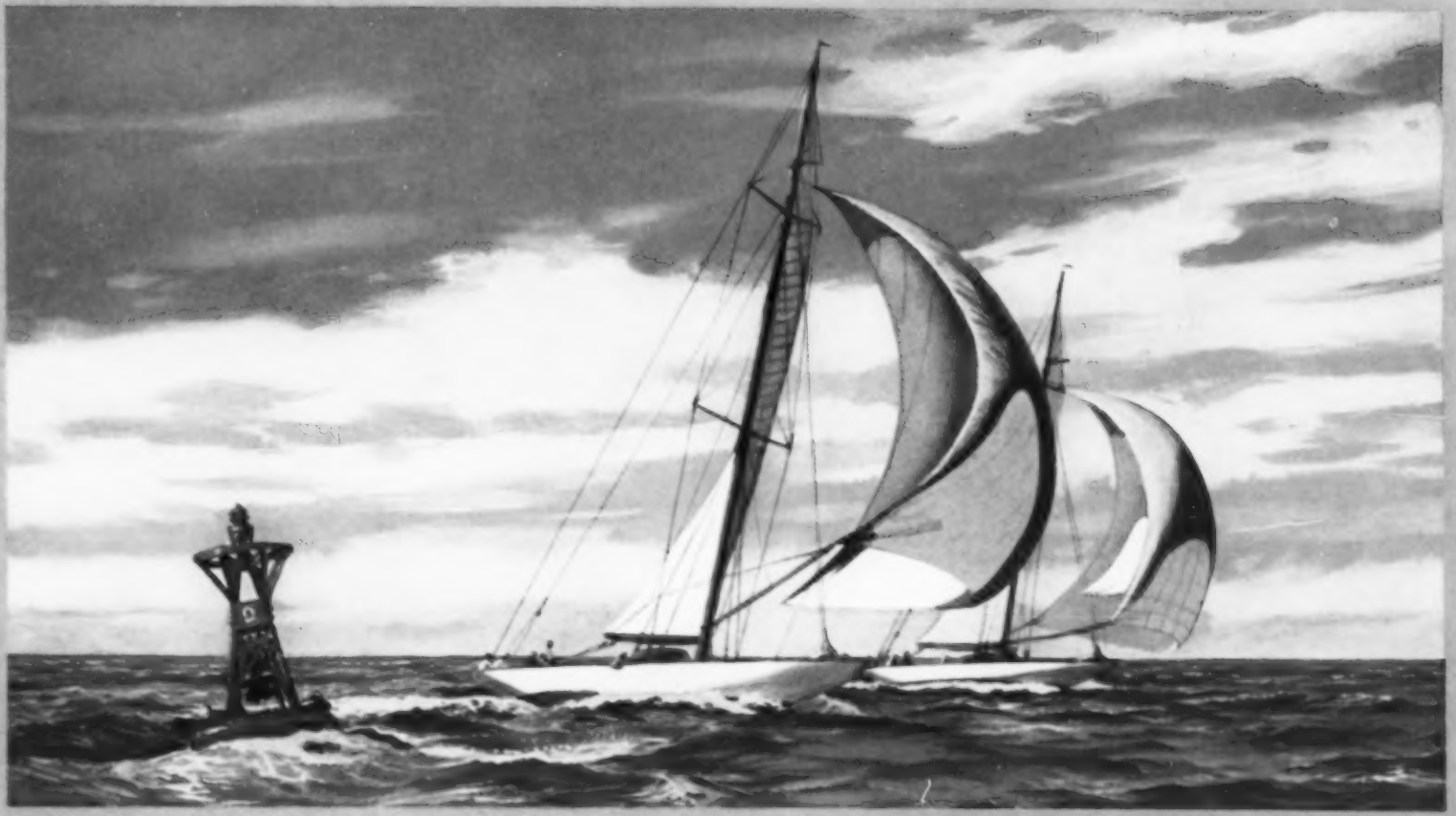
* * * * *

The Supreme Court affirmed the findings of the trial court: "Where there has been such a lapse of time as we have here, and there is a duty on the part of the purchaser to inspect and maintain against that sure deterioration which is bound to follow from ordinary use, failure of the performance of that duty, but for which the accident could not have happened, becomes the proximate and not merely a concurring cause."

Based on opinion of Supreme Court of Minnesota



FOR SUPERIOR PERFORMANCE–



POLYCYCLINE *is a tetracycline produced by the unique Bristol process of direct fermentation from a new species of Streptomyces. Its basic structural formula (as compared with older analogues) gives significantly superior clinical performance.*

The most modern
Broad-Spectrum Antibiotic

AVAILABLE AS

POLYCYCLINE
SUSPENSION '250'

Ready to use without reconstitution, stable for 18 months without refrigeration.
Really palatable.
— in concentration of 250 mg. per 5 cc., in bottles of 30 cc.

POLYCYCLINE®

TRADE MARK (TETRACYCLINE BRISTOL)

Polycycline is a tetracycline produced by the unique Bristol process of direct fermentation from a new species of Streptomyces isolated by Bristol Laboratories . . . rather than made by the chemical modification of older broad-spectrum antibiotics.

POLYCYCLINE
PEDIATRIC DROPS

For accurate dosage in small amounts.
— in concentration of 100 mg. per cc. in bottles of 10 cc. with dropper calibrated for administration of 25 or 50 mg.

Like its older analogues, it is

EFFECTIVE IN BROAD RANGE

against gram-positive and gram-negative organisms, certain rickettsiae and large viruses.

Unlike its older analogues, it has a

BASIC STRUCTURAL FORMULA

no chlorine atom (present in chlortetracycline); and no hydroxyl group (present in oxytetracycline).

SUPERIOR CLINICAL PERFORMANCE

greater tolerance: markedly lower incidence and severity of adverse side effects.

greater solubility than chlortetracycline, yielding quicker absorption and wider diffusion in body fluids and tissues.

greater stability in solution than chlortetracycline or oxytetracycline, permitting higher, more sustained blood levels.

POLYCYCLINE
CAPSULES

Handy form for oral use, in two potencies:
— in capsules of 100 mg., in bottles of 25 and 100.
— in capsules of 250 mg., in bottles of 16 and 100.

POLYCYCLINE
INTRAMUSCULAR

For deep intramuscular injection.
— in vials of 100 mg. per vial.

Bristol
LABORATORIES INC.
SYRACUSE, NEW YORK

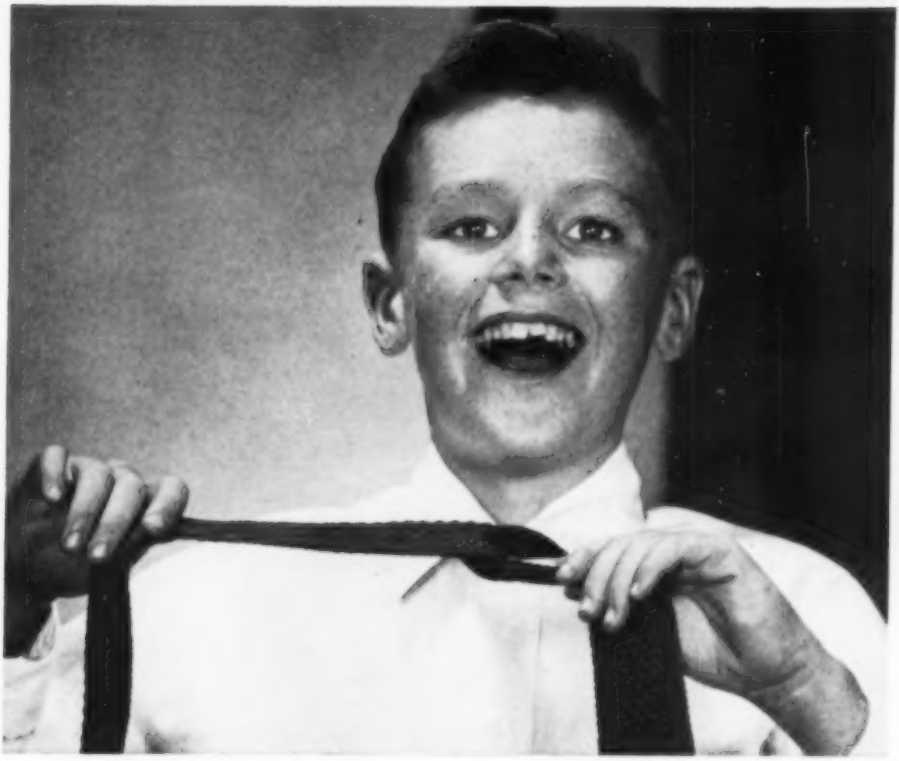
When you think of Tetracycline, think of POLYCYCLINE

Tracinets®

BACITRACIN-TYROTHRICIN TROCHES WITH BENZOCAINE

help sore throats feel better, faster

MAJOR ADVANTAGES: Two well-accepted topical antibiotics for local antibacterial effect. Benzocaine for soothing local anesthesia.



Patients like the fast and effective relief that TRACINETS bring to sore, irritated throats. When you prescribe TRACINETS, you give your patients the *combined* antibacterial action of bacitracin and tyrothricin. The benzocaine gives soothing local relief. TRACINETS are also an ideal supplement to systemic therapy of severe throat infections.

Supplied: Each troche contains 50 units of bacitracin, 1 *mg.* of tyrothricin, 5 *mg.* of benzocaine. In vials of 12.

SHARP & DOHME

Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

AT LAST

the ANSWER

to the chronic appetite problem
Critically essential l-lysine in

LACTOFORT

makes it the first truly complete

For dramatic stimulation of appetite.

Rapid weight gain.

Improved protein utilization.

In infants and young children with loss of appetite, delayed growth and suboptimal nutrition.

LACTOFORT

Provides l-lysine, the critically essential amino acid now known to be relatively inadequate in milk and other commonly used pediatric foods[1]--

Plus essential multiple vitamins, iron and calcium[2]--

In powder form—readily and completely dissolves in milk and milk formulas without affecting taste, odor or color.

White Laboratories, Inc.
Kenilworth, New Jersey

A TYPICAL CASE RESPONSE

(Carol, age 13 months . . .
5 pounds underweight)

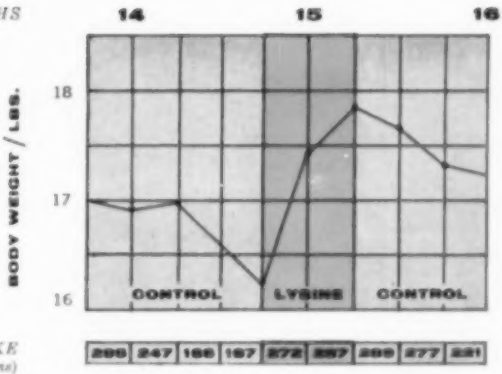


Chart shows marked effect of supplemental lysine on body weight and blood proteins of underweight child, who because of aversion to solid foods was fed milk formula reinforced with milk protein preparations. Adequate amounts of multiple vitamins (including vitamin B_{12}) were administered during both control and lysine-supplement periods. High protein and high caloric diet was without effect except for reducing appetite of the child. It was only when supplemental lysine was added to this diet that prompt appetite improvement and better utilization of dietary protein occurred. When lysine supplementation was discontinued, nutritional regression occurred.

pediatric nutritive supplement

Lactofort is indicated for use in the nutritional management of pediatric patients with poor appetite and subnormal body weight due to a variety of causes such as in the premature infant • gastrointestinal disturbances • infection • allergy and other factors that lead to chronic impairment of food intake, absorption or utilization.

LACTOFORT

- *odorless*
- *tasteless*
- *readily soluble in whole milk or formula*
- *stable potency—unaffected even by terminal sterilization*

DOSAGE:
1 to 2 Lactofort measuring spoonfuls daily depending on weight. A special Lactofort measuring spoon accompanies each bottle. Available in 46 Gm. bottles containing 40 level measuring spoonfuls.

FORMULA

Each 2.3 Gm. White's LACTOFORT (approximately two level measures) provide:

l-lysine (from l-lysine monohydrochloride)	500	mg.
Vitamin A acetate	3750	U.S.P. units
Vitamin D	1000	U.S.P. units
Thiamine mononitrate	0.75	mg.
Riboflavin	1.25	mg.
Niacinamide	7.5	mg.
Vitamin B_{12}	2.5	mcg.
Folic acid	0.25	mg.
Ascorbic acid (from sodium ascorbate)	75	mg.
Pyridoxine hydrochloride	0.75	mg.
Calcium pantothenate	7.5	mg.
Iron (elemental) (from iron ammonium citrate green)	7.5	mg.
Calcium (elemental) (from calcium gluconate)	130	mg.

BIBLIOGRAPHY

1. *Albanese, A. A., Higgons, R. A., Hyde, G. M. and Orto, L.: Biochemical and Nutritional effects of Lysine Reinforced Diets, Am. J. Clin. Nutrition Vol. 3, (Mar.-Apr.) 1955*
2. *Food and Nutrition Board, National Research Council. Publ. #302 Recommended Dietary Allowances Revised 1953, Washington, D. C.*

particularly in **Pediatrics**

...when oral medication is difficult

Busy mothers welcome your prescription of **NUMOTIZINE** for the many and varied conditions to which the younger set is heir—such painful, sleep-interrupting conditions as—

sore throat, tonsillitis, pharyngitis, inflammatory chest conditions, sprains, strains, boils, contusions

NUMOTIZINE® Prescription Cataplasm

—provides relief for eight hours or longer on a single application—permitting the child to sleep throughout the night.

Employed adjunctively to the use of antibiotics and chemotherapeutic agents, **NUMOTIZINE** keeps the patient comfortable while the disease process is under attack.

NUMOTIZINE combines decongestive and analgesic actions—reduces swelling, relieves pain, increases local circulation. Easy to apply and remove.

supplied: 4, 8, 15 and 30-oz. jars

HOBART LABORATORIES, Incorporated

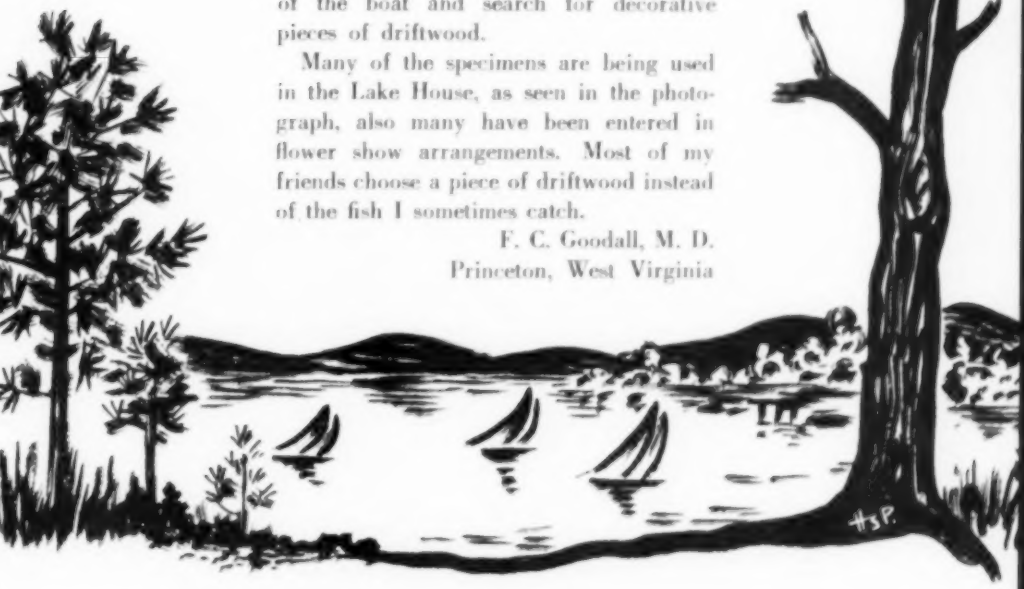
900 N. Franklin St. Chicago 10, Illinois

After Hours

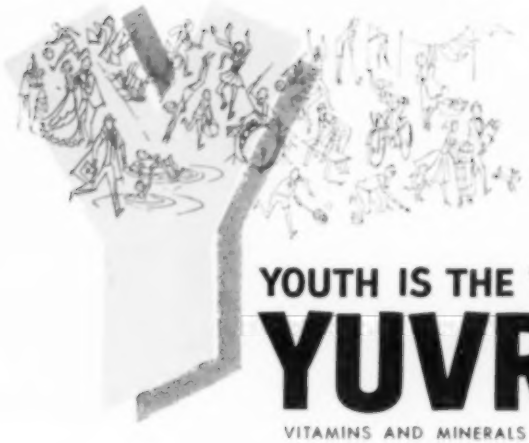
During the past 10 years I have been fishing on a large artificial lake and I became interested in driftwood. Many unusual and interesting pieces were found lying on shores or hidden between rocks. When fishing became dull I would get out of the boat and search for decorative pieces of driftwood.

Many of the specimens are being used in the Lake House, as seen in the photograph, also many have been entered in flower show arrangements. Most of my friends choose a piece of driftwood instead of the fish I sometimes catch.

F. C. Goodall, M. D.
Princeton, West Virginia



Driftwood is used for decorative and practical purposes—such as lamp bases or settings for floral arrangements.



YOUTH IS THE TIME FOR YUVRAL*

VITAMINS AND MINERALS CAPSULES LEDERLE

For the big and important age group between pediatrics and geriatrics, Lederle offers YUVRAL Capsules, a new diet supplement. A highly potent formula including 11 vitamins, 13 minerals, and Purified Intrinsic Factor Concentrate—all in a dry-filled, soft-gelatin capsule with no unpleasant aftertaste.

Among adolescents and young adults, there are many "nutritionally starved" persons: those with strong dislikes for certain foods, those who won't drink milk, young women on self-prescribed diets. Just one YUVRAL Capsule daily assures them of an adequate supply of essential vitamins and minerals.

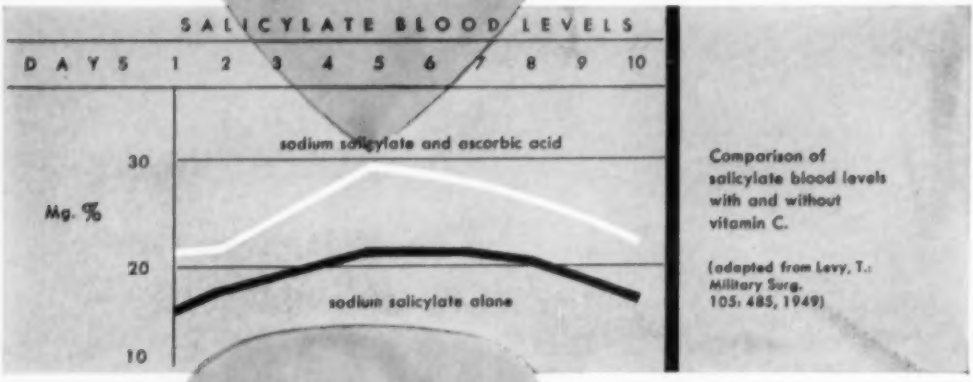
Each capsule contains:	
Vitamin A	5000 U.S.P. Units
Vitamin D	500 U.S.P. Units
Vitamin B_{12}	1 mcgm.
Thiamine Mononitrate (B_1)	3 mg.
Riboflavin (B_2)	3 mg.
Niacinamide	20 mg.
Folic Acid	0.2 mg.
Pyridoxine HCl (B_6)	0.5 mg.
Ca Pantothenate	1 mg.
Ascorbic Acid (C)	50 mg.
Vitamin E (as tocopheryl acetates)	5 I.U.
Iron (as $FeSO_4$)	15 mg.
Iodine (as KI)	0.15 mg.
Boron (as $Na_2B_4O_7 \cdot 10H_2O$)	0.1 mg.
Copper (as CuO)	1 mg.
Fluorine (as CaF_2)	0.1 mg.
Purified Intrinsic Factor Concentrate	0.5 mg.
Magnesium (as MgO)	1 mg.
Manganese (as MnO_2)	1 mg.
Potassium (as K_2SO_4)	5 mg.
Zinc (as ZnO)	0.5 mg.
Calcium (as $CaHPO_4$)	69 mg.
Phosphorus (as $CaHPO_4$)	53.8 mg.
Dibasic Calcium Phosphate	236 mg.
Molybdenum (as $Na_2MoO_4 \cdot 2H_2O$)	0.2 mg.

*[illegible]

LEDERLE LABORATORIES DIVISION
AMERICAN Cyanamid COMPANY Pearl River, New York

Lederle

TRULY HIGHER salicylate blood levels..



Comparison of salicylate blood levels with and without vitamin C.

(adapted from Levy, T.: Military Surg. 105: 485, 1949)

give TRULY GREATER relief of pain

Armyl produces higher and more effective salicylate blood levels than is possible with salicylates alone

The high vitamin C content of Armyl helps to raise the salicylate blood level and permits more effective therapeutic results and with smaller dosage. Special coating prevents local gastric irritation.

plus antihemorrhagic protection

Armyl guards against depletion of vitamin C due to urinary loss. It also provides the antihemorrhagic protection of vitamin C during prolonged salicylate therapy.

synergistic action with ACTH

For co-administration of HP* ACTHAR® *Gel* and Armyl, the Sodium-Free form offers special advantages.

*Highly Purified

Armyl®

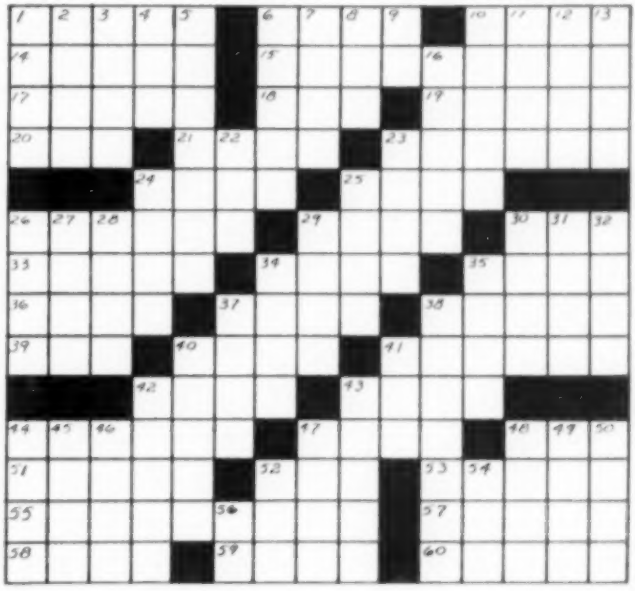
Each enteric-coated tablet contains:
Sodium Salicylate (5 gr.).....0.3 Gm.
Sodium Para-aminobenzoate (5 gr.).....0.3 Gm.
Ascorbic Acid (50 mg.).....0.05 Gm.
Bottles of 100 capsule-shaped tablets.
Also available ARMYL Sodium-Free

THE ARMOUR LABORATORIES
A DIVISION OF ARMOUR & COMPANY • KANKAKEE, ILLINOIS

MEDICAL TEASERS

A Challenging Crossword Puzzle for the Physician

(Answer on page 160a)



Contributed by Mrs. J. Van Cleft Cooper

ACROSS

1. Schleich's paste
6. Bone instrument
10. Visitors are —— in sick room
14. States positively
15. Common joint disease
17. Projecting growth from a mucus surface
18. English physician (1819-1900)
19. Make amends
20. Pointed tool
21. An article
23. Covered with a thin layer
24. Part of the eye
25. Corn meal bread
26. Produced by putrefaction
29. Inter
30. Kind of balm
33. Another time
34. Metal used in dentistry
35. Tissue
36. Pike-like fish
37. Minim
38. Infectious agent
39. Poem
40. Blood vessel
41. Vibrate
42. Fine sand
43. Obligation
44. Specimen of blood for analysis
47. Ray emitted by radium
48. Our mutual Uncle
51. Standard of perfection
52. "——" applications are good for 15 Across
53. Cut into small pieces
55. Drug used in 15 Across
57. Angry
58. Joint
59. German river
60. Time when diseases seem worse

DOWN

1. Verine, opium derivative
2. Declare openly
3. Barter
4. Attempt
5. Anodyne
6. Violent passions
7. Plant furnishing sago
8. Hordeolum
9. Pharmacist (Abbr.)
10. Name
11. Small particle
12. Twining plant
13. Employed
16. Unfavorable weather
22. Nervous twitch
23. Wade
24. Inflammation (suffix)
25. Soft tissue
26. Spleen in amyloid disease
27. Old oath
28. Famous French surgeon (1510-1590)
29. What the physician is to humanity
30. Great mass of ice
31. Jewish month
32. Medicine will—pain
34. Unyielding courage
35. Very small
37. Cancel
38. Metabolic catalyst
40. Fat-absorbing parts of the intestine
41. Young pharaoh (abbr.)
42. Flood
43. Turn aside
44. Not in good health
45. Apparatus used to transmit parallel rays
46. Nothing but
47. Ossified tissue
48. Protuberance
49. Pituitary hormone
50. Convene
52. Brick carrier
54. Biblical character
56. Thus

NUTRITIONAL AND THERAPEUTIC ADJUVANTS IN HEALTH AND DISEASE

Bioflavonoids of Orange and Lemon

Hesperidin Complex
Lemon Bioflavonoid Complex
Hesperidin Methyl Chalcone
Calcium Flavonate Glycoside

Action of the bioflavonoids on the capillary

Maintenance of normal capillary integrity
For the treatment of abnormal capillaries such as:
Increased fragility
Increased permeability
Decreased resistance

Bioflavonoid activities in cellular metabolic processes

Hyaluronidase inhibition
Antihistamine effect
Closely related to the activity of the adrenal cortex
Inhibition of epinephrine oxidation
Sparing action on vitamin C
Synergism with vitamin C

Indications

As adjuvants in many disease states having capillary impairment including:
Habitual abortion
Respiratory diseases
Inflammatory diseases
Vascular diseases
Geriatrics

Exchange Brand Bioflavonoids are available to the medical profession in pharmaceutical specialties through leading pharmaceutical manufacturers.

Sunkist Growers

PRODUCTS DEPARTMENT

Exchange

PHARMACEUTICAL SALES • ONTARIO, CALIFORNIA

NEW PRODUCT

"colprosterone"

Vaginal Progesterone

MORE ACCEPTABLE

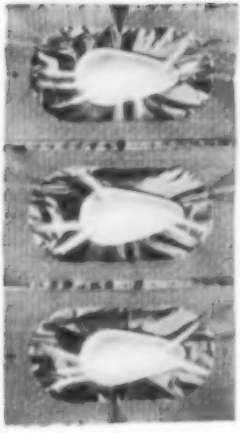
- **Avoids pain and inconvenience of injection**
- **Insures better patient cooperation than any other dosage form**

MORE DEPENDABLE

- **Response is more predictable than with oral, or buccal and sublingual therapy**

MORE ECONOMICAL

- **Cost is low in terms of greater patient benefits**



"colprosterone"

Vaginal Tablets—Brand of progesterone U.S.P. presented in a specially formulated base to insure maximum absorption and utilization.

Indications: Amenorrhea, functional uterine bleeding, habitual abortion, chronic cystic mastitis, and premenstrual tension.

Suggested Dosage: Complete dosage regimens are included in literature which is available on request.

Supplied: No. 793—25 mg. tablets (silver foil), boxes of 30.
No. 794—50 mg. tablets (gold foil), boxes of 30.

Each tablet is individually and hermetically sealed. Presented in strips of 3 units, detachable as required.

Ayerst Laboratories • New York, N. Y. • Montreal, Canada

Ayerst

8517

BLUE

AT

BREAKFAST?

STOP morning sickness with BONADOXIN*

(BRAND OF MECLIZINE HCl, PYRIDOXINE HCl)

RESULTS of this new COMBINATION

In 50 patients with nausea and vomiting, Weinberg reports 88% good to excellent results.[1]

In another series, Bonadoxin abolished vomiting in 40 of 41 gravida, eliminated nausea in 30 of the 41.[2]

Each Bonadoxin tablet contains:

Meclizine HCl . . . . 25 mg.
Pyridoxine HCl . . . . 50 mg.

Mild cases: One Bonadoxin tablet at bedtime.

Severe cases: One at bedtime and on arising.

In bottles of 25, prescription only.

1. Weinberg, Arthur, and Werner, W. E. E.: Bonadoxin, a New Effective Oral Therapy for Hyperemesis Gravidarum, New York Medical College and Rockaway Beach Hospital, 1954.
2. Personal communication.

Ponnie Rx CHICAGO 11, ILLINOIS

*TRADEMARK

LETTERS TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

Regarding Medical Times Prescription Pad Holder

To: Medical Times
Subject: Especially for You

A "gift" is due *you* for the fine articles, concise, well written and so readable that have come to be a mark of MEDICAL TIMES.

In any case, thank you for your fine publication.

G.H.N., M.D.
Newark, New Jersey

Received the combination prescription pad holder and wallet. Thank you so much for your thoughtfulness.

I enjoy reading MEDICAL TIMES and value its information.

T.R.E., M.D.
Joliet, Illinois

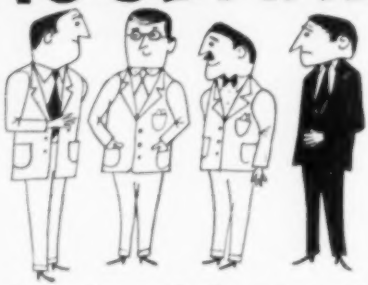
Today I received a lovely surprise in the pad holder and wallet from you. It came at a time when it is most appreciated because I had an old one that wore out so gradually that I did not note it until a poor old lady patient remarked on it and handed me one. This, however, was not suitable to my B blanks, but I accepted it with thanks saying that my next order of blanks would be tailored to it.

—Concluded on page 55a

VAGINAL TRICHOMONIASIS –

25% OF HUSBANDS

FOUND TO HARBOR THE PARASITE



TRICHOMONAL infestation is not a purely gynecological disorder. Bernstine and Rakoff point out that "the presence of trichomonads in the genito-urinary tract of men is now known to be of rather common occurrence."[1]

Significant statistics – "The incidence of infestation in the male is placed at 5 to 15 per cent."[1] Whittington reports it in 27 per cent[2]; Feo in 15.5 per cent[3]; Freed in 28.5 per cent.[4] In Karnaky's study of 150 husbands of women with recurrent trichomoniasis, 25 per cent harbored the parasites.[5]

The ubiquitous protozoan – The reported incidence would, probably, be even higher if all foci of infection (urethra, prostate, seminal vesicles, bladder, kidney, pelvis, and preputial sac) were studied in each case. Another reason for inadequate statistics is that male trichomoniasis is largely asymptomatic.[1,3,6,8]

Re-infection now prevented – In view of this mildness or absence of symptoms, male trichomoniasis is rarely the subject of active therapy. It tends to subside by itself within a few months, provided "re-infection does not occur."[5] Unfortunately, such infected husbands, though symptom-free, are "none the less a potential source of re-infection in wives successfully treated."[8] The re-infected wife, in turn, re-infects the husband.

To break the re-infection cycle, Karnaky insists that "the husband should wear a condom at coitus for four to nine months, during which time these trichomonads will usually die out of their own accord."[7] Bernstine and Rakoff give similar recommendation: "If the male harbors trichomonads, condoms should be used during sexual intercourse until it is certain the infestation has been cleared up entirely."

Prescribe specifically – Take specific measures to win co-operation of the husband. In prescribing a condom, be selective and take advantage of Schmid product improvements.

When there is anxiety that the condom might dull sensation, the answer is to prescribe XXXX (TOUREX)[R] skins. Made from the cecum of the lamb, they feel like the patient's own skin, are pre-moistened and do not retard sensory effect. If cost is a consideration, prescribe RAMSES,[R] a transparent, tissue-thin, yet strong condom of natural gum rubber. SHEIK,[R] also of natural gum rubber, is even more reasonable in price.

Any husband, any wife, in your practice, would prefer to hand the druggist your *prescription* for a condom, rather than to ask for it "in public." Isn't that true? Your act of diplomacy prevents an embarrassing situation. To assure finest quality and earn appreciation for your thoughtfulness, prescribe XXXX (TOUREX), RAMSES or SHEIK by name. Prescribe Schmid protection for as long as *four to nine months* after the wife's infestation has cleared. The protection Schmid condoms afford is the very foundation of re-infection control.

References: 1. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations, and Discharges, New York, The Blakiston Co., 1953, pp. 256-258. 2. Whittington, M. J.: J. Obst. & Gynaec. Brit. Emp. 58:614 (Aug.) 1951. 3. Feo, L. G.: Am. J. Trop. Med. 24:195 (May) 1944. 4. Freed, L. F.: South African M. J. (March 27) 1948, as abstracted in Urol. and Cutan. Rev. 52:489 (Aug.) 1948. 5. Karnaky, K. J.: Urol. and Cutan. Rev. 42:812 (Nov.) 1938. 6. Glen, J. E., Jr., and Bailey, R.S.: J. Urol. 66:294 (Aug.) 1951. 7. Karnaky, K. J.: J.A.M.A. 155:876 (June 26) 1954. 8. Lanceley, F., and McEntegart, M. G.: The Lancet 1:668 (April 14) 1953.

from pain to productivity

Acetycol brings quick and effective relief to the patient suffering from arthritis, osteoarthritis, acute or chronic gout, and related rheumatoid disorders. As Acetycol increases the range of pain-free movement, the patient is able to resume a more normal, satisfying and productive life.

The prompt, sustained effect of Acetycol is due to a synergism between aspirin and para-aminobenzoic acid. High salicylate blood levels are attained with relatively low dosage. The addition of salicylated colchicine extends the effectiveness of Acetycol to gout or cases of a gouty nature.

Acetycol contains three important vitamins often deficient in older and rheumatic patients: these are ascorbic acid for prevention of degenerative changes in connective tissues; and thiamine and niacin for carbohydrate utilization and relief of joint pain and edema.

Each Acetycol tablet contains:

Aspirin	325.0 mg.
Para-aminobenzoic acid	162.0 mg.
Colchicine, salicylated	0.25 mg.
Ascorbic acid	20.0 mg.
Thiamine hydrochloride	5.0 mg.
Niacin	15.0 mg.

Supplied: Bottles of 100 and 500.

Acetycol

TRADEMARK

to relieve rheumatic pain

WARNER-CHILCOTT

'Incurable disease'?

The phrase "incurable disease" is fast disappearing from the physician's vocabulary. Yet, you will agree, it is impossible to eliminate this term from the easily diagnosed, annoying skin disease, . . .psoriasis.

LIPAN®

Now . . . at last . . . for psoriatics you may prescribe an *oral* product of outstanding clinical effectiveness which will eliminate the lesions and keep your patients symptom free.

Clinical evidence indicates that psoriasis may be caused by a disturbance of lipid metabolism, evidently due to deficiency of pancreatic enzymes.

*

LIPAN therapy is based upon replacement of pancreatic insufficiency. **LIPAN** contains: Specially prepared highly activated dessicated and defatted Pancreatic substance: Thiamine HCl, 1.5 mg.; and Vitamin D, 500 I.U.

LIPAN Capsules, clinically effective in 90% of treated cases.*

LIPAN.....*and nothing but LIPAN*, as maintenance regimen, keeps patients free of lesions.**

AVAILABLE in bottles of 180 capsules through prescription druggists.

*Harris, O. J., et al.: Whole Defatted Pancreatic Substance in the Treatment of Psoriasis. Journal Lancet, 72:7 pages 328-330. (July 1952)

**Combes, F. C.: Management of Psoriasis as a Metabolic Lipid Disturbance. New York State Journal of Medicine, 54:13 pages 1945-1949. (July 1954)

Complete literature and reprints upon request.

Spirt & Co. INCORPORATED
WATERBURY • CONNECTICUT

whole root
therapy of
hypertension

RAUDIXIN

SQUIBB RAUWOLFIA

RAUDIXIN CONTAINS ALL THE ALKALOIDS OF THE WHOLE ROOT:

- Ajmaline
- Ajmalicine (Delta-Yohimbine)
- Isoajmaline
- Ajmalinine
- Neoajmaline
- Isorauhimbine
- Rauhimbine
- Rauwolfinine
- Reserpine
- Reserpinine
- Sarpagine (Raupine)
- Serpentine
- Serpentinine
- Yohimbine
- Rescinnamine
- Reserpiline
- Other unidentified alkaloids

Reserpine accounts for practically all of the *sedative* effect of rauwolfia.

Reserpine does not account for all of the *hypotensive* effect of rauwolfia. Other alkaloids, which are not sedative in action, contribute to the hypotensive effect of rauwolfia.

Raudixin is preferred in hypertension because it supplies the total activity of the whole root and does not cause excessive sedation.

50 and 100 mg. tablets,
bottles of 100 and 1000.
Initial dose: 100 mg. b.i.d.

SQUIBB

nonsensitizing . . . rapid acting . . . topical anesthetic

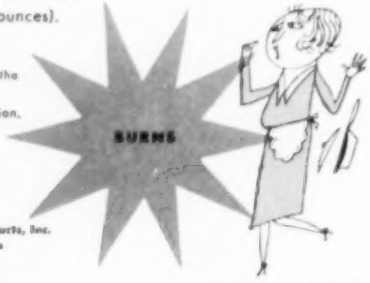
XYLOCAINE® OINTMENT ASTRA

(Brand of lidocaine*)

a new form of the widely accepted Xylocaine Hydrochloride solution

- Xylocaine Ointment provides unusually rapid, and deeply penetrating anesthesia without the drawback of toxicity, sensitization or irritation. Xylocaine is unique in this respect.
- For use in the control of itching, burning and other dermatologic distress. May also be applied liberally on skin and accessible mucous membranes to prevent pain during examination or instrumentation.
- Available in a water soluble, nonstaining vehicle as 2.5% and 5% Xylocaine base in collapsible tubes or wide-mouth jars, each containing 35 grams (approx. 1.25 ounces).

Xylocaine Ointment is now made available at the request of many physicians, surgeons, and anesthetists who routinely use Xylocaine Solution.



ASTRA

Astra Pharmaceutical Products, Inc.
Worcester 6, Massachusetts

*U. S. Patent No. 2,441,498

LETTERS TO THE EDITOR

—Concluded from page 47a

This one, however, is "just what the doctor ordered" to fill my needs.

I had looked in several stores for one but unsuccessfully.

I thank you most sincerely for this thoughtful gift.

S.S.M., M.D.
New Haven, Connecticut

Thanks for the beautiful gift which arrived this a.m. It will be as useful as the MEDICAL TIMES itself which is every day.

A.C.R., M.D.
Blue Island, Illinois

Thanks ever so much for the combination prescription pad holder and wallet. About eight years ago I had a similar combination and truthfully used it until it was worn out.

S.L.N., M.D.
Austin, Texas

Kindly accept my thanks for the leather R case which you sent me. Appreciate it very much.

Might add at this time that I read and enjoy and save the MEDICAL TIMES which you also send me.

B.J.A., M.D.
Flemington, New Jersey

I appreciate and thank you for your R pad holder.

For years I have been asking surgical supply dealers for an R holder instead of giving away dozens of appointment books and similar unnecessary things. I could not even buy it. Thanks again.

B.E., M.D.
Elmhurst, New York

for seborrheic dermatitis patients

SELSUN®

. . . *brings quick, sure relief*

Just two or three SELSUN applications relieve itching, burning scalps. Four or five more completely clear scaling. Then each SELSUN application keeps the scalp free of scales *for one to four weeks.* And SELSUN completely controls 81-87% of all seborrheic dermatitis cases, 92-95% of dandruff cases.

. . . *with no daily care or ointments*

Your patients will find SELSUN remarkably easy to use. It is applied and rinsed out while washing the hair. Takes only about five minutes—no messy ointments or overnight applications. Leaves both hair and scalp clean. In 4-fluid-ounce bottles, on prescription only. Abbott

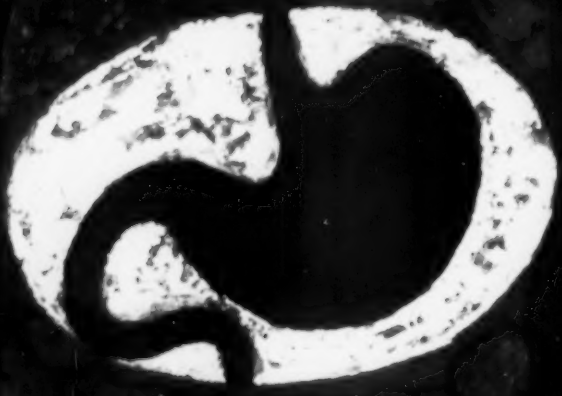
®SELSUN *Sulfide Suspension / Selenium Sulfide, Abbott*

NOW. . PIPERIDOL ACTION

for peptic ulcer pain . · spasm

cholinolytic

PIPTAL®



RELIEF DAY AND NIGHT

without urinary retention or

constipation

NORMALIZES GASTRIC MOTILITY AND SECRETION

Closely related to the visceral eutonic DACTIL®, PIPTAL curbs gastric hypermotility and duodenal spasm without significantly altering normal tonus or motility. A postganglionic parasympathetic inhibitor, cholinolytic PIPTAL normalizes gastric secretion, favors ulcer healing without undue interference with digestion.

WITHOUT URINARY RETENTION OR CONSTIPATION

Unlike compounds of other derivation, the effect of PIPTAL, latest LAKESIDE piperidol, is negligible on bladder and distal colon. Mydriasis, dryness of the mouth and tachycardia occur infrequently and are usually mild and transient. Side effects necessitating withdrawal of PIPTAL have not been observed.

cholinolytic

PIPTAL

Use the Patient Report Form accompanying mailed samples and see it work in your practice.

For relief day and night: One tablet T.I.D. and one or two H. S. Each tablet contains 5 mg. of PIPTAL, the *only* brand of *N*-ethyl-3-piperidyl -benzilate methobromide.

Lakeside Laboratories Inc. PIONEERS IN PIPERIDOLS Milwaukee 1, Wisconsin

a circulatory
and respiratory
stimulant . . .

Coramine®

ORAL SOLUTION

(nikethamide CIBA)

Clinical experience over many years has shown that Coramine Oral Solution is useful as a circulatory and respiratory stimulant for asthenic or elderly patients. It has been reported that Coramine Oral Solution may be beneficial in patients with coronary occlusion, in whom it appears to improve collateral circulation in the infarcted area and to stimulate the respiratory center.[1] Being noncumulative and having low toxicity, Coramine Oral Solution is suitable for prolonged treatment without danger of habituation developing. *Dosage:* ½ to 1 teaspoonful (2 to 4 ml.) 2 or 3 times a day—diluted, if desired, with water.

SUPPLIED: Coramine Oral Solution, a 25% aqueous solution of nikethamide; bottles of 1 and 3 fluid oz. and 1 pint. Also for intravenous or intramuscular use: Ampuls, 1.5 ml. and 5 ml.; multiple-dose vials, 20 ml.

1. Carey, L. S.: Delaware M. J. 21:229 (Oct.) 1949.

CIBA
SUMMIT, N. J.

z/2002

MODERN MEDICINALS

These brief resumes of essential information on the newer medicinals, which are not yet listed in the various reference books can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Antepar Citrate Brand Piperazine Citrate, Burroughs Wellcome & Co., Inc., Tuckahoe 7, N. Y. Scored tablets containing piperazine citrate in an amount equivalent to either 250 mg. or 500 mg. of piperazine hexahydrate. For treatment of pinworms and roundworm. **Dose:** Up to 15 lbs., one 250 mg. tablet once daily; 15-30 lbs., one 250 mg. tablet twice daily; 30-60 lbs., one 500 mg. tablet twice daily; over 60 lbs., two 500 mg. tablets twice daily; Adults, two 500 mg. tablets twice daily. **Sup:** 250 mg. tablets in bottles of 100 and 1,000; 500 mg. tablets in bottles of 100 and 1,000.

A-P-Cillin-200, White Laboratories, Inc., Kenilworth, N. J. Each small, coated tablet contains acetylsalicylic acid, 150 mg., phenacetin, 150 mg., caffeine, 45 mg., diphenylpyraline hydrochloride, 2 mg., procaine penicillin G, 200,000 units. Specifically designed for the management of acute upper respiratory infections. **Dose:** The usual adult dosage is one tablet q.i.d. for the duration of the symptoms. For optimal effect, the tablets should be taken at least 1 hour before or 2 or more hours after meals. **Sup:** In bottles of 24 and 100 tablets each.

Butibel, McNeil Laboratories, Inc., Philadelphia 32, Pa. A new antispasmodic-sedative. Combination of Butisol sodium, 10 mg. and **natural** extract belladonna, 15 mg. per tablet or teaspoonful of the elixir has the advantage of each therapeutic agent having approximately equal durations of action. **Dose:** Adults, 1 tablet or 1 teaspoonful 3 times daily, ½ hour before meals, and 1 or 2 teaspoonfuls or tablets at bedtime; Children, (6 yrs. or older) ½ tablet or ½ teaspoonful; Infants and children less than 6 yrs. of age, ¼ to ½ teaspoonful of the elixir, according to age and weight. **Sup:** In bottles of 100 and 1,000 tablets; the elixir in pints and gallons.

Calcidrine Expectorant Troches with Dihydrocodeinone., Abbott Laboratories, North Chicago, Ill. Candy-like in form, apricot in flavor, combine sedative and expectorant effects with a prolonged soothing action on irritated mucous membrane of throat. For coughs due to simple acute and subacute bronchial infections; especially where night cough prevents rest. Also in allergic and asthmatic cough. **Dose:** Adults and children over 6 years of age, 1 troch every 2 to 4 hours, not to exceed 8 troches a day. Children under 6 years, only as directed by physician. **Sup:** In bottles of 25.

Colprosterone, Ayerst Laboratories, Inc., New York 16, N. Y. Brand of progesterone U.S.P. vaginal tablets. The 25 Mgm. potency is required in cyclic menstrual regulation, the 50

—Continued on page 61a

Check the "symptom-complex" of

CLISTANAL FORMULA

Each scored tablet contains:

Clistin® Maleate, N.N.R. (Carbinoxamine Maleate, McNeil)..... 2 mg.
Acetylsalicylic Acid..... 230 mg. (3½ gr.)
Acetophenetidin..... 150 mg. (2½ gr.)
Caffeine..... 30 mg. (½ gr.)

—colored yellow—
in bottles of 100 and 1000 tablets

Let Clistanal help your patients "live through" a cold—comfortably. Samples on request.

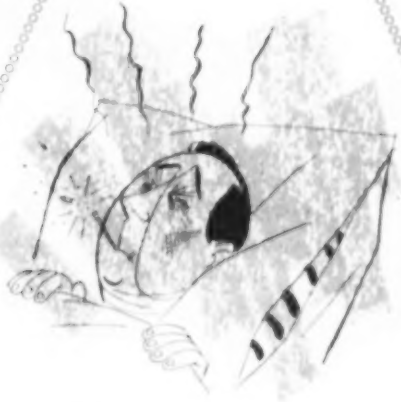
McNEIL

LABORATORIES, INC., PHILA. 32, PA.

1. Beale, H.D., Rawling, F.F.A. and Figley, K.D.: Jl. Allergy, *25*:521 (Nov.) 1954.

2. Johnson, H.J., Jr.: Amer. Pract. and Digest Treat. *5*:862 (Nov.) 1954.

*Trade-mark



the common cold...CLISTANAL*

Now you can give your patients with "colds", sinusitis, and other upper respiratory disorders the benefits of Clistin® plus APC. Clistanal—a prescription formula insuring physician control—provides Clistin's potent antihistaminic action with a minimal risk of drowsiness[1, 2], and APC's analgesic-antipyretic effect.

The result—rapid relief of nasal hypersecretion, "stuffiness," sneezing, headache, fever, aches and pains.

invitation to asthma?

not necessarily . . .

Tedral, taken at the first sign of attack, often forestalls severe symptoms.

relief in minutes . . . Tedral brings symptomatic relief in a matter of minutes. Breathing becomes easier as Tedral relaxes smooth muscle, reduces tissue edema, provides mild sedation.

for 4 full hours . . . Tedral maintains more normal respiration for a sustained period—not just a momentary pause in the attack.

Tedral provides:

Theophylline ..... 2 gr.
Ephedrine HCl ..... ⅜ gr.
Phenobarbital ..... ⅛ gr.

in boxes of 24, 120 and 1000 tablets

Tedral®

WARNER-CHILCOTT

—Continued from page 61a

Mgm. potency is needed in treatment of habitual abortion. Tablets are designed for intravaginal administration only. **Dose:** One or two tablets daily. **Sup:** In bottles of 30—25 Mgm., bottles of 30—50 Mgm.

Erythrogran, Upjohn Company, Kalamazoo 99, Mich. A granular preparation supplying erythromycin base in protection-coated pink granules. Each packet contains erythromycin, 50 mg. **Dose:** One or more packets as prescribed by physician. **Sup:** Boxes of 18 packets.

Euphased-5 Tablets, Schenley Laboratories, Inc., New York, N. Y. A more potent dosage form of the stimulant-anoretic "Euphased," containing twice the amount of d-desoxyephedrine hydrochloride (5 mg.) and the same amount of acetyl-carbromal, or "Sedamyl" (0.26 gm.). Indicated as an appetite depressant in obesity and CNS stimulant in depressive states. **Dose:** For anoretic effect—adults, one or one-half tablet ½ hour before breakfast and lunch, and, in some cases, a third dose in mid-afternoon if it does not cause insomnia; for euphoric effect—as required, but not recommended after 4 P.M. **Sup:** In bottles of 100 and 1,000 scored tablets.

Hemo-Vitol Liquid. Carroll Dunham Smith Pharmacal Co., New Brunswick, N. J. Liquid containing in each 5 cc. ferrous gluconate, 100 mg., vitamin B_{12}, 10 mcg., thiamine hydrochloride 2 mg., and cobalt, 2.5 mg. For treatment of microcytic hypochromic anemia. **Dose:** Two teaspoonfuls 3 times daily, preferable after meals. **Sup:** In bottles of one pint.

Hypaque, Winthrop-Stearns, Inc., New York 18, N. Y. A new excretory radiopaque agent, which provides satisfactory x-ray films of the urinary tract in an unusually high percentage of cases with virtually no reported major side effects. It contains 59.87 percent iodine and is highly water soluble. Chemically, the drug is sodium 3,5-diacetamido-2,4,6-triiodobenzoate. **Dose:** It was found that a dose of 30 cc. of Hypaque sodium, 50% solution, produced dense, sharp shadows in the vast majority of adult patients who had previously been partly dehydrated and effectively purged. Clearly defined shadows on film were often obtained after 5 minutes after injection of Hypaque. **Sup:** In a 50% sterile aqueous solution, in 30 cc. ampuls.

Lactofort, White Laboratories, Inc., Kenilworth, N. J. A comprehensive nutrient mixture used to fortify milk formula or whole milk for infants and young children. Provides sufficient lysine, an essential amino acid to increase the nutritional value of milk protein, plus all necessary vitamins, iron and calcium in a soluble, tasteless powder form. Specifically designed to correct chronic lack of appetite, lack of weight gain or undernourishment due to a variety of conditions. **Dose:** As determined by physician. **Sup:** In bottles containing 46 Gm. or 40 measures with a special measuring spoon.

Luminal Ovoids, Winthrop-Stearns Inc., New York 18, N. Y. Sugar coated, oval-shaped tablets with a distinctive color identification of three dosage strengths—yellow, one-quarter grain; light-green, one-half grain; dark green, one and one-half grain. Luminal is the pioneer brand of phenobarbital and has been described by physicians for over 30 years as a sedative, antispasmodic, hypnotic and anticonvulsant. **Dose:** As determined

—Continued on page 70a

FOR SELF-ADMINISTERED INHALATION ANALGESIA

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

ACCEPTED COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION AMERICAN MEDICAL ASSOCIATION

"Trilene"®

Brand of trichloroethylene U.S.P. (Blue)

"Duke"® University Inhaler

No. 3160 Model-M

in obstetrics and minor surgery

notably safe and effective

"Trilene," self administered with the "Duke" University Inhaler, under proper medical supervision, provides highly effective analgesia with a relatively wide margin of safety. Induction is usually smooth and rapid with minimum or no loss of consciousness. If unconsciousness occurs, inhalation is automatically interrupted. Nausea and vomiting seldom occur. Recovery is rapid.

"Trilene" is now accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

convenience of administration

The "Duke" University Inhaler (Model-M) is specially designed for economy, facility of handling, and ready control of vapor concentration. The patient treated on an ambulatory basis in the physician's office or the hospital can usually leave within 15 to 30 minutes.

The "Duke" University Inhaler is now accepted by the Council on Physical Medicine and Rehabilitation of the American Medical Association.

"Trilene" alone is recommended only for analgesia, not for anesthesia nor for the induction of anesthesia. When using "Trilene" in conjunction with anesthetic agents (as an analgesic adjunct), standard machines may be employed provided they are adjusted so that "Trilene" *is not used in a closed circuit with soda lime.* Epinephrine is contraindicated when "Trilene" is administered.

"Trilene" is available in 300 cc. containers, 15 cc. tubes, and 6 cc. ampuls.

Ayerst Laboratories make "Trilene" available in the United States by arrangement with Imperial Chemical (Pharmaceuticals) Limited.

Ayerst Laboratories • New York, N. Y. • Montreal, Canada

Ayerst

5515

When feet feel like ice—

...when patients complain of cold feet because peripheral circulation is impaired, Roniacol® 'Roche' --an effective, well-tolerated vasodilator--provides:

→ 1. prolonged vasodilation

→ 2. appealing form (elixir or tablets)

→ 3. relative freedom from side reactions

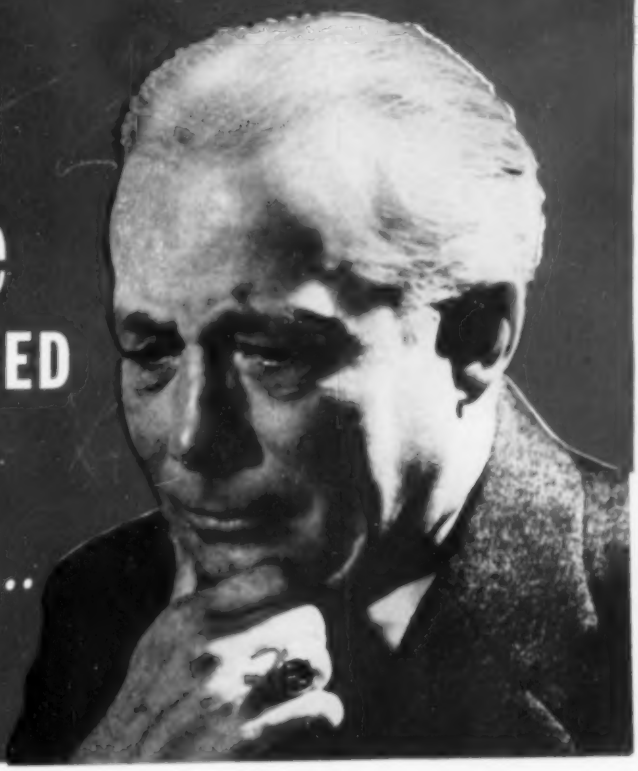
Speaking of vasodilators —

WHICH DO YOU PRESCRIBE?

No matter which one you have been using, we believe you'll agree that most of them are reasonably good.

Still, we suggest you try Roniacol® 'Roche' ... because it's so well tolerated that patients can take it for months ... because it often provides prolonged relief ... because it's available in an elixir and in tablets.

mental balance IN THE AGED *may be restored...*



NICOZOL relieves senile psychoses and cerebral arteriosclerosis, including mild loss of memory, mental confusion and deterioration, and abnormal behavior patterns.

Rehabilitation and release from public and private psychiatric institutions treating such disorders is possible.

NICOZOL has been proved* safe and simple, as well as practical and inexpensive, and may be used with confidence to treat ambulatory cases.

NICOZOL
for senile psychoses

*Reference: *Levy, S., Pharmacological Treatment of Aged Patients in State Mental Hospitals, J.A.M.A., 153:14, Pages 1260-1265, Dec. 5, 1953.*

Available in capsules and elixir – ask your pharmacist.

Samples and literature will gladly be sent upon request.

DRUG SPECIALTIES, INC. WINSTON-SALEM 1, N. C.

PREOPERATIVE SEDATION

one of the 44 uses

for short-acting **NEMBUTAL**®
(Pentobarbital, Abbott)

Just 0.1 Gm. (1½ grs.) of short-acting NEMBUTAL the night before and 0.1 to 0.2 Gm. (1½ to 3 grs.) two hours before operation will allay apprehension, induce sleep and decrease the amount of general anesthetic needed. And with these advantages:

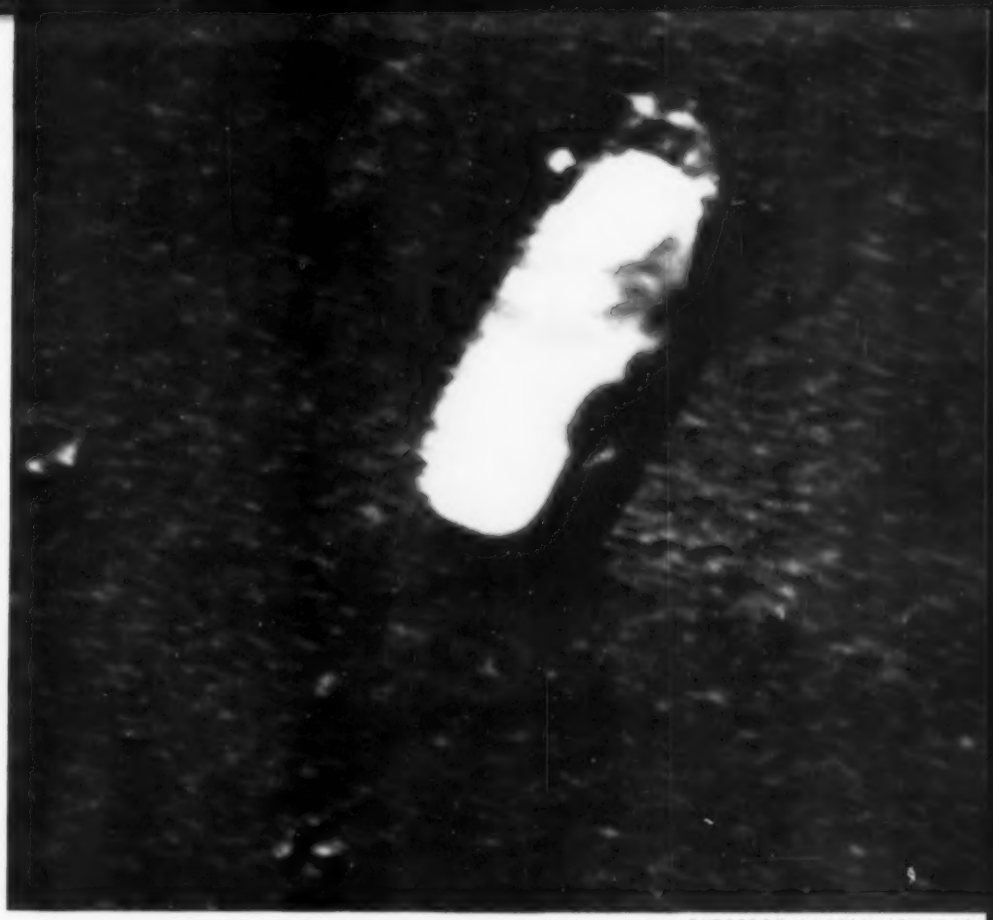
➡ *Short-acting* NEMBUTAL *can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.*

➡ *The dosage required is small—only about one-half that of many other barbiturates.*

➡ *Hence, there's less drug to be inactivated, shorter duration of effect, wide margin of safety and little tendency toward morning-after hangover.*

➡ *In equal oral doses, no other barbiturate combines quicker, briefer, more profound effect.*

Abbott



ELECTRON PHOTOMICROGRAPH

Hemophilus influenzae 55,000 X

Hemophilus influenzae ("influenza bacillus") is a Gram-negative organism which grows only in the presence of hemoglobin. Contrary to its name, it is not the causative agent in influenza, but rather is commonly involved in

meningitis • chronic bronchitis • bronchiolitis • tracheobronchitis

supraglottic laryngitis • bronchopneumonia

It is another of the more than 30 organisms susceptible to

PANMYCIN® HCl

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

125 mg./tsp. and 250 mg./tsp. oral suspension (Panmycin Readimixed)

Upjohn

®TRADEMARK, REG. U. S. PAT. OFF.

—Continued from page 65a

by physician. **Sup:** Each dosage strength is supplied in bottles of 100 and 1,000.

Novahistine-DH, Pitman-Moore Company, Indianapolis 6, Ind. Each 5 cc. teaspoonful contains phenylephrine hydrochloride, 10.0 mg., prophenpyridamine maleate, 12.5 mg., dihydrocodeinone bitartrate, 1.66 mg., chloroform (approx.) 13.5 mg., l-menthol, 1.0 mg., alcohol, 10% and sugar content, 33⅓%. Indicated for treatment of respiratory conditions complicated by congested mucosa, bronchospasm, and non-essential harmful cough. Especially useful for managing complications of the common cold, bronchitis, and cough of allergic origin. **Dose:** May be taken 3 or 4 times a day as indicated, in the following doses: Adults, 2 teaspoonfuls; Children, 1 teaspoonful; Infants, ¼ to ½ teaspoonful. **Sup:** In pint and gallon bottles.

Piptal, Lakeside Laboratories, Milwaukee, Wisc. N-ethyl-3-piperidyl-benzilate methobromide, for relief of pain and spasm of peptic ulcer. **Dose:** One tablet 3 times a day before meals, and one or two at bedtime. **Sup:** In bottles of 100 scored, 5 mg. tablets.

Quadra-Sed Liquid, Carroll Dunham Smith Pharmacal Company, New Brunswick, N. J. A new liquid sedative-hypnotic. Each 5 cc. contains pentobarbital sodium 15 Mgm., phenobarbital sodium 15 Mgm., buta-

—Concluded on page 76a

for your tense peptic ulcer patients

new
ANTRENYL®-PHENOBARBITAL

depresses... ...gastrointestinal motility

...gastric acid secretion

...nervousness and irritability so common in the ulcer diathesis

SUPPLIED: Antrenyl Phenobarbital Tablets (scored), each tablet containing 5 mg. Antrenyl and 15 mg. phenobarbital.

Other forms: Tablets, 5 mg. Syrup, 5 mg. per 4 ml. teaspoonful. Pediatric Drops, 1 mg. per drop.

Antrenyl® bromide (oxyphenonium bromide CIBA)

CIBA
SUMMIT, N. J.

2/2092M

AMES
COMPANY, INC.

manufacturers of *Decholin,*® *Decholin Sodium,*® *Decholin* with Belladonna, *Clinitest,*® *Acetest,*® *Ictotest,*® and other adjuncts in clinical management

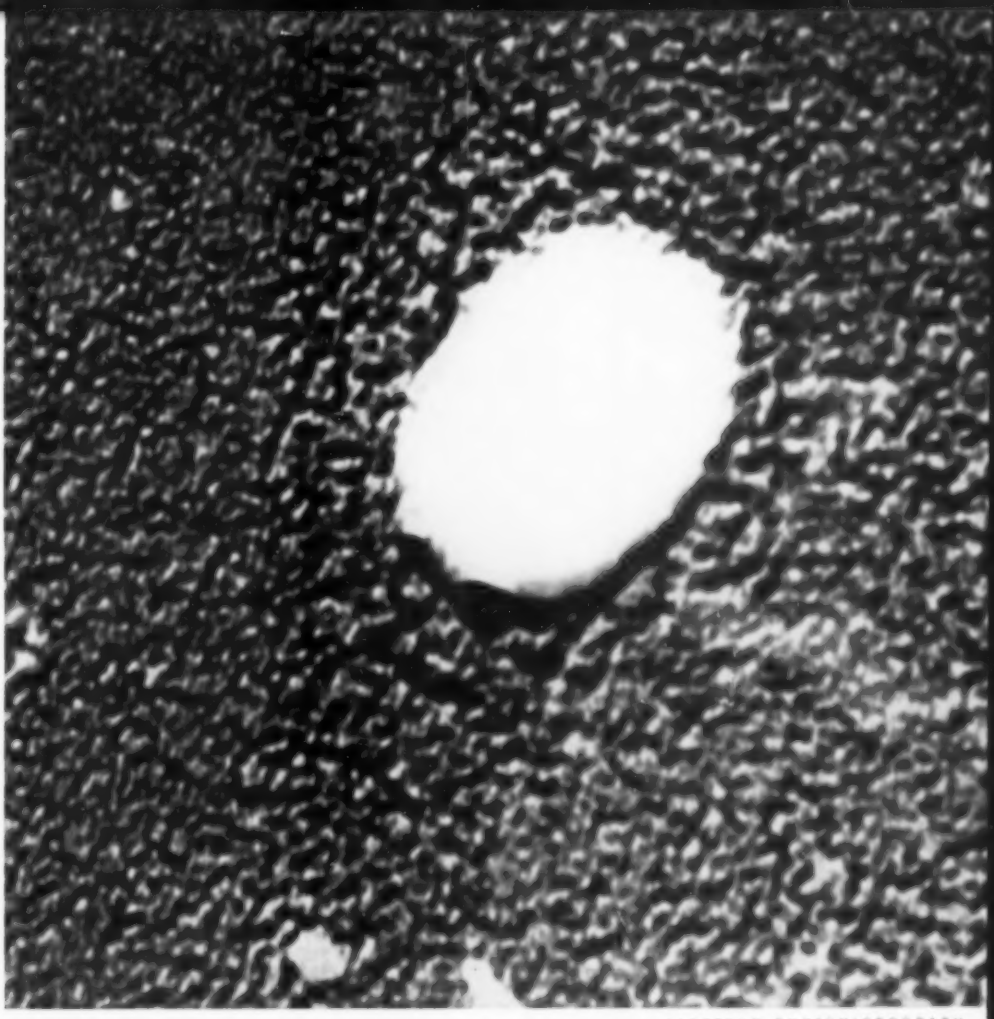
announces that it has merged into its research, production and professional service programs, the facilities and products of the fifty-year old

ERNST **BISCHOFF**
COMPANY, INC., IVORYTON, CONN.

manufacturers of *My-B-Den,*® *Aminet*® *Diatussin*® and *Bi-co-tussin*®

®TRADEMARK

AMES COMPANY, INC • ELKHART, INDIANA



ELECTRON PHOTOMICROGRAPH

Shigella dysenteriae 35,000 X

Shigella dysenteriae (Shiga's bacillus) is a Gram-negative organism which causes bacillary dysentery.

It is another of the more than 30 organisms susceptible to

PANMYCIN® HCl

TETRACYCLINE HYDROCHLORIDE

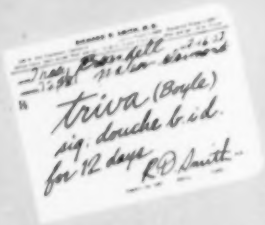
100 mg. and 250 mg. capsules

125 mg./tsp. and 250 mg./tsp. oral suspension (**Panmycin** *Readimixed)*

Upjohn

®TRADEMARK, REG. U.S. PAT. OFF.

SIMPLE *to prescribe . . .*



No insufflations, no messy jellies, no inserts or staining dyes when you prescribe Triva for any case of vaginitis. After douching twice daily for 12 days, have patient return for re-examination on 14th day. If asymptomatic, prescribe two douches weekly to prevent re-infection and for general hygiene.

SIMPLE *for patients to use . . .*

A vaginal douche, the patient's treatment of choice,* Triva is safely administered by the patient at home. Package contains mixing instructions and method of douching, normally as well as during pregnancy or menstruation.

AVAILABLE AT ALL PHARMACIES

In convenient packages of 24 individual 3 Gm. packets, each containing 35% Alkyl aryl sulfonate, ½% Disodium ethylene bis-iminodiacetate, 33% Sodium sulfate, 2% Oxyquinoline sulfate and 9½% Lactose as dispersant.

Full treatment package and literature on request . . . write

the **CLINICALLY**

PROVED 12-DAY

TREATMENT FOR VAGINITIS

No office treatment necessary with

TRIVA

(BOYLE)

A SIMPLE, NON-TOXIC, NON-STAINING VAGINAL DOUCHE

DISINTEGRATES and ANNIHILATES ORGANISMS

Triva's powerful detergent surface-active agent, enhanced by a chelating agent, virtually explodes the organisms and flushes them away leaving the vaginal cavity clean and organism-free . . . safely and with no irritation. Triva is effective in ANY pH medium.

Clinical tests prove Triva effective in all 3 forms of vaginitis:

TRICHOMONAL: "43 (of 45) patients were apparently cured after one week."*

MONILIAL: "12 (of 15) patients became asymptomatic and no organisms were seen after one week of treatment."*

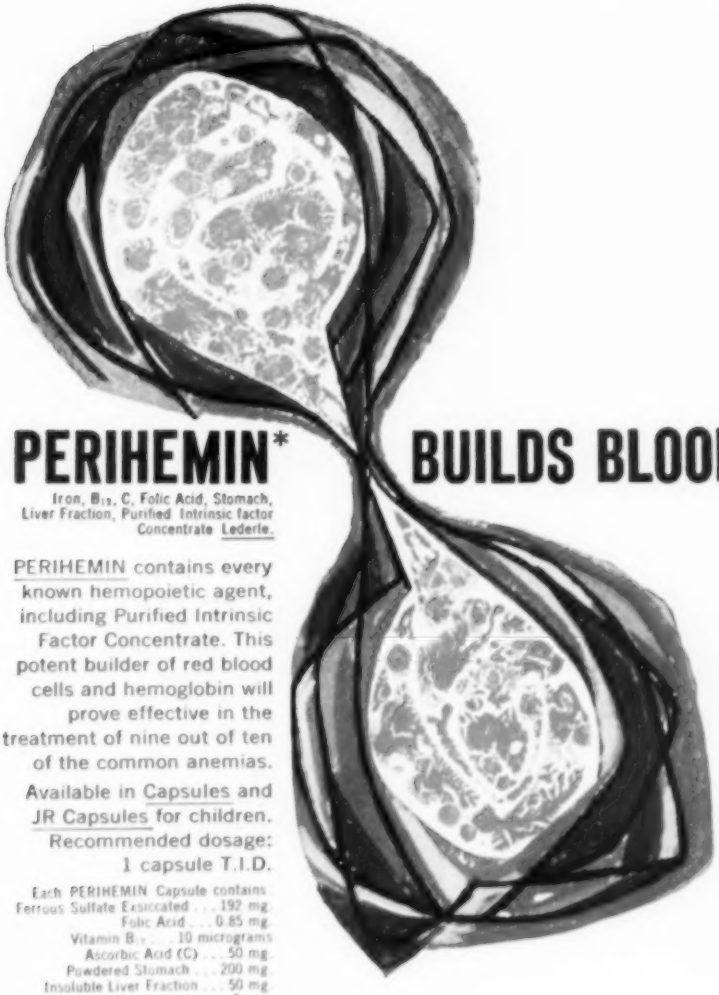
NON-SPECIFIC: Highly effective dependent upon primary source. "23 cases of cervical erosion were treated. 13 of them were apparently cured."*

BOYLE

BOYLE & COMPANY

LOS ANGELES 33, CALIFORNIA

*Gernand, W. C., and Gallagher, Robt.: Obst. & Gyn., 2:522 (Nov.) 1953



PERIHEMIN* BUILDS BLOOD

Iron, B_{12}, C, Folic Acid, Stomach, Liver Fraction, Purified Intrinsic factor Concentrate Lederle.

PERIHEMIN contains every known hemopoietic agent, including Purified Intrinsic Factor Concentrate. This potent builder of red blood cells and hemoglobin will prove effective in the treatment of nine out of ten of the common anemias.

Available in Capsules and JR Capsules for children.

Recommended dosage: 1 capsule T.I.D.

Each PERIHEMIN Capsule contains:
Ferrous Sulfate Exsiccated . . . 192 mg.
Folic Acid . . . 0.85 mg.
Vitamin B_{12} . . . 10 micrograms
Ascorbic Acid (C) . . . 50 mg.
Powdered Stomach . . . 200 mg.
Insoluble Liver Fraction . . . 50 mg.
Purified Intrinsic Factor Concentrate . . . 0.5 mg.

JR Capsules are approximately one-quarter the potency of this formula.

Lederle

LEDERLE LABORATORIES DIVISION
AMERICAN Cyanamid COMPANY Pearl River, New York

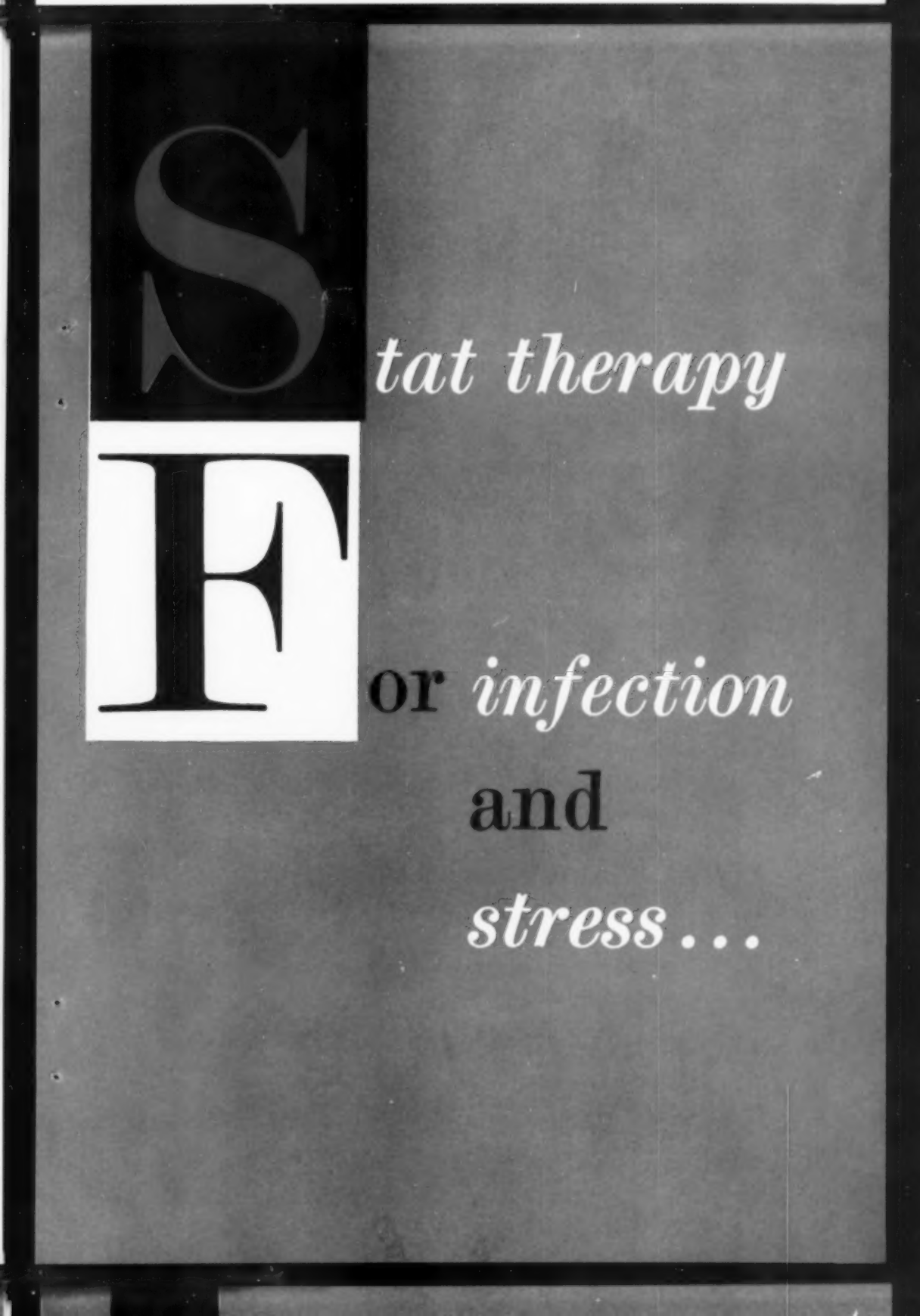
REG. U. S. PAT. OFF.

—Concluded from page 75a

barbital sodium 15 Mgm., Secobarbital sodium 15 Mgm. blended for synergistic effect: **Dose:** 5 cc. in or followed by water for hypnotic effect. Contains no alcohol or sugar. This can be prescribed for diabetics. **Sup:** In pint bottles.

Selsun Sulfide 0.5% Jelly, Abbott Laboratories, North Chicago, Ill. Relieves discomfort from and provides control in seborrhea of the glabrous areas. Itching, scaling and granulating are promptly relieved. **Dose:** Cleanse affected areas thoroughly with warm water. With swab or applicator, apply Selsun Jelly to seborrheic areas, rubbing lightly. Allow Jelly to remain on the skin only approximately 30 minutes, then remove with clean cloth or tissue. Repeat application once or twice daily until condition is cleared. Do not permit Selsun Jelly to enter conjunctival sac, because stinging and irritation to the conjunctiva may ensue. **Sup:** In 1/4 oz. tubes by prescription only.

Serpine Tablets, Pitman-Moore Company, Indianapolis 6, Ind. Each tablet contains 0.3 mg. of reserpine crystalline alkaloid isolated from roots of Rauwolfia serpentina. Indicated in symptomatic treatment of emotional tension states associated with such conditions as hypertension, neuroses, certain psychoses, and menopause. **Dose:** Two tablets daily — one after morning and evening meals. **Sup:** In bottles of 100 tablets.


Stat therapy
For infection
and
stress . . .

...with a single prescription

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1. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, Prepared with Collaboration of the Committee on Therapeutic Nutrition, Food and Nutrition Board, National Research Council, Baltimore, Waverly Press, 1952.

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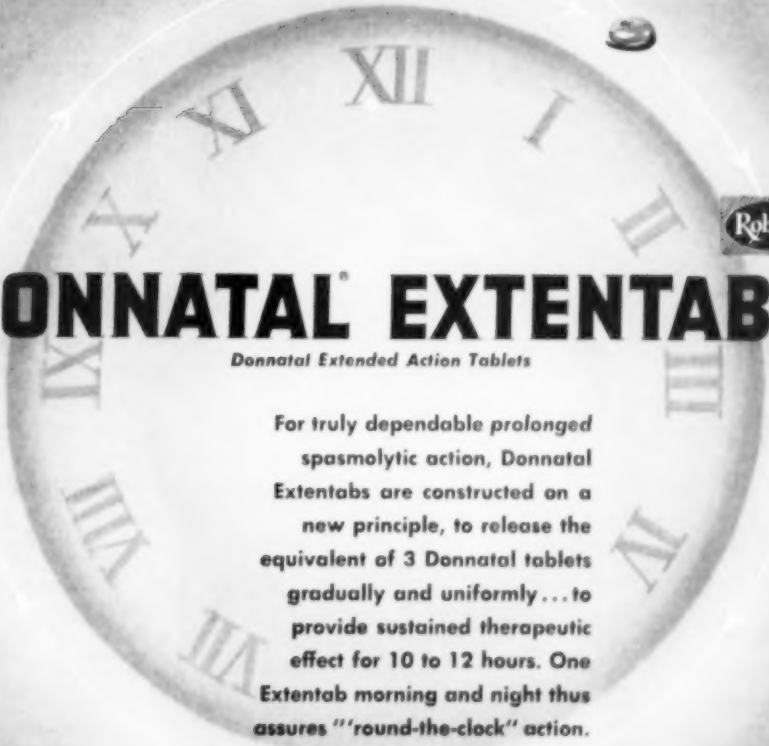

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Blindness in Premature Babies

—Retrolental Fibroplasia

ARLINGTON C. KRAUSE, Ph.D., M.D., F.A.C.S.
Chicago, Illinois

The catastrophic epidemic of blind babies in the United States during the past fifteen years is caused by a new disease called retrolental fibroplasia. It is the most common cause of blindness in the pre-school child. The total number of affected children is unknown but it runs into thousands.

Clinical Aspects Retrolental fibroplasia is a bilateral retinopathy that is seen frequently in premature babies and very rarely in full term infants after the first weeks of life. It is associated with premature nurseries in hospitals. Because the usual practice is not to examine the eyes of the infant through dilated pupils with the aid of the ophthalmoscope upon discharge from the hospital the mother almost always is the first to notice the defective eyes of the infant with retrolental fibroplasia. The first signs that are observed with poor vision are the lack of response to light, the white pupil, a squint and the irregular movements of the eyes.

The common severe form of the disease which is quite easily detected by the mother may progress. The retinal mass behind the lens pushes forward, collapsing the anterior chamber of the eye. The irises become thin and adhere to the lens. A temporary glaucoma may arise giving pain to the child. The eyeball no longer attains its full growth. The shrinking of the orbital contents ends in a partial closure of the sunken lids and endophthalmus. The appearance of the older child with severe retrolental fibroplasia is quite typical.

In the light form of the disease, the symptoms may be only evident as a strabismus or defective vision in the early year of school.

Examination of Child If the eyes of the premature child with retrolental fibroplasia are examined with the ophthalmoscope the course of the disease can be followed. The pupils are dilated with one per cent homatropine. For a better examination the older infant is given nembutal by rectum or ether anesthesia.

After the diagnosis of retrolental fibroplasia is made, the refractive error

From the Division of Ophthalmology, Department of Surgery, of The University of Chicago.

is estimated if the retina is well seen in its normal position. If the error is high, the vision fair, and the child is over two years old, the proper lens may be helpful.

If the eyes are normal at birth, the ocular disorder usually appears after six or more days after birth. The onset may be gradual or abrupt and mild to severe. It begins with a cloudy vitreous, edema of the peripheral retina, vasodilation with or without hemorrhages, tortuosity of the retinal vessels and vascular proliferation. The events occur in this order of increasing severity. At this stage the process is still reversible and the terminal effect may be myopia, marked astigmatism, atrophic retina, vitreous opacities, granular retinal pigmentation and a distortion of the disc. The eyes may have a high refractive error, amblyopia and a squint. This mild form of retrolental fibroplasia may become evident when the child starts to go to school.

If the damage increases, small vessels appear in the vitreous and on the retina, particularly in the periphery. A part of the retina detaches and may remain as a white scarred plaque or mass. The connective tissue proliferation from the vitreous, retina and ciliary body may form a gray stalk extending externally from the disc to one side in back of the lens. The vessels on the retina are aberrant or absent. A light on one side of the pupil shows a lateral retrolental gray mass and on the other a dystropic retina. The vision in these eyes is low. If the retina becomes totally detached and the vitreous filled with proliferated connective tissue, an opaque mass of scarred atrophic retina is seen adjacent to the lens. The iris atrophies and adheres to the lens. The anterior chamber is lost. In some instances the lens becomes a cataract, and the cornea is opaque and the bulb shrinks. The terminal stage depends upon the age of the premature, severity of damage and the degree of retrogression. In the past the partly or totally detached retinas were frequently the end stage. At present the milder forms with fair vision are becoming more prevalent.

Etiology The search for the cause of retrolental fibroplasia has gone in many directions. The etiology is not related to the parents, pregnancy, delivery, specific infections or congenital diseases, metabolic deficiencies, race or drugs. It is associated with premature nurseries in hospitals with the best modern incubators and pediatric management.

Premature infants have more trouble in surviving than full term infants and in the better equipped hospitals they are placed in air conditioned incubators with a source of supplemental oxygen. Recently in the United States and Europe it was observed that retrolental fibroplasia was connected with excessive oxygen that was given to these prematures. Hospitals that had no oxygen or discontinued the use of oxygen had no such blind infants. Later it was found that if the concentration of oxygen was kept below thirty-five to forty per cent no retrolental fibroplasia developed. Furthermore the lesions of the disease could be produced experimentally under the same condition that existed in the incubators in the premature nursery. The answer to the problem of prevention of retrolental fibroplasia is the administration of oxygen only when it is necessary for the survival of the child and only in concentration

below forty per cent for as short a time as possible.

Anemia, severe illness, debility and metabolic disorders may be added factors that induce the disease in infants that otherwise would show no ocular damage from oxygen.

Pathology If the knowledge that has been recently acquired may be applied to retrolental fibroplasia, then the story of its pathology starts with the underdeveloped retina which is just beginning to be vascularized in the premature infant. Normally the growth of its vessels from the disc is rapid in the first four months of life. When the premature child is exposed to a high concentration of oxygen the small growing vessels are partly or totally obliterated. The vessels do not grow if the concentration of oxygen remains high. After reexposure to air the larger vessels dilate. Serious exudation and hemorrhages may occur. Intravitreal growth of connective tissue and vascular proliferation into the retina and vitreous take place.

Treatment There is no specific treatment for retrolental fibroplasia. Instillation of cortisone, miotics and mydriatics into the conjunctival sac is not helpful. Supplementary vitamins added to the diet have no effect. Parenteral ACTH and cortisone have no influence on the course of the disease. Roentgen ray treatment to reduce vascularity and connective tissue formation does not alter the pathological process. Surgical procedures for the relief of the secondary glaucoma and for the removal of opaque membranes generally result in added damage to the eye. Evidently secondary factors such as anemia, metabolic disturbances and infections may make the course of the disease worse and these are to be avoided.

Since treatment does not alter the course of ocular damage, prevention is extremely important. With prevention in mind supplemental oxygen is given to premature infants only when it is the necessary treatment for cyanosis and respiratory distress. The carefully measured concentration of oxygen is kept below forty per cent and for the shortest possible time. The mortality rates of premature infants with and without oxygen therapy are not essentially different.

The State of the Child with Retrolental Fibroplasia After the parents are told that the child has retrolental fibroplasia and is blind and that there is no cure, they have an overwhelming feeling of despair and hopelessness. They now have a problem for a lifetime. The physician may greatly help to lessen the many anxieties of these parents by telling them that the child, if it is otherwise normal, can become an independent adult, can receive a good education and in spite of a visual handicap can be happy. If the parents are referred to proper social service groups that care for the blind and are given suitable literature of the blind societies, such as the American Foundation for the Blind, they are grateful. In many states there are newly organized groups of people interested in blind children and the problems of these parents. The sooner the mother is adjusted to her blind child the better it is for the child.

In the beginning of the epidemic of blindness from retrolental fibroplasia, the diagnosis was generally the terminal event. Either through lack of sensory and motor stimulation from over protection or an attitude of hopelessness,

or lack of knowledge by the parents, many of the children became physically and mentally retarded. Some were placed in state institutions for retarded children. The treatment of these children is rapidly changing. When the normal blind child is properly cared for and stimulated along with other sighted children of the same age, he grows to be an independent adult. The physician who is the first consultant and who gives the parents some hope starts them in the right direction.

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Poliomyelitis

This summarization attempts to cover the essential information on the subject, including therapy, and is designed as a time-saving refresher for the busy practitioner.

Part 1

Poliomyelitis (Infantile Paralysis), within the light of present day knowledge and research, is a disease principally affecting the large motor cells of the anterior horns of the spinal cord, and sometimes the brain stem, certain nuclei and the motor area of the brain, causing signs and symptoms varying from a mild respiratory or gastro-intestinal type of disturbance through painful muscle spasm, paresis, paralysis of limb and trunk even to the extent of causing a cessation of vital motor functions.

It is now felt[22] that an exogenous, small virus, separated by epidemiological and laboratory investigations into three[48] types (the Brunhilde I, Laansing II, and the Leon III), is the cause. Scobey[21,22] believes that there is some exogenous toxic factor consumed by man that activates an endogenous or synthesized agent or virus, not normally transmissible. This interesting viewpoint is not shared to any great extent by other workers in the field.

Incidence, Historical and Geographical Aspects A glance at the incidence, historical and geographical aspects[3] of the disease reveals that although acute paralysis in infants as a syndrome entity goes back to Biblical times, the serious attention of physicians was not attracted to the problem prior to the late eighteenth century. Nevertheless infantile paralysis was widespread sporadically by the early nineteenth century. The earliest descriptions of it came from scattered areas: England 1795, Italy 1813, India 1823, and the United States by 1830. However, the first apparent record of an epidemic appeared in 1836 in children on the Island of St. Helena.

The classic work on Poliomyelitis was done by Whitman of Sweden who was the first to have an inkling that non-paralytic polio was actually the typical, common form of the disease with the various paralytic types as rarer complications of the severer and more toxic forms. It was not until 1908 when Landsteiner and Popper discovered the virus of polio that the relationship could be proven, and more firmly established.

Originally, the disease was truly an infantile paralysis. There was a concentration of the paralytic cases within this early age group of 90 per cent, agreed upon by most of the authors. With the increasing incidence of the disease and the fairly rapid spread within the past 15-20 years geographically over the whole globe, there has been a shift to older groups. This was evidenced by Siegel and Greenberg's study of New York City cases from

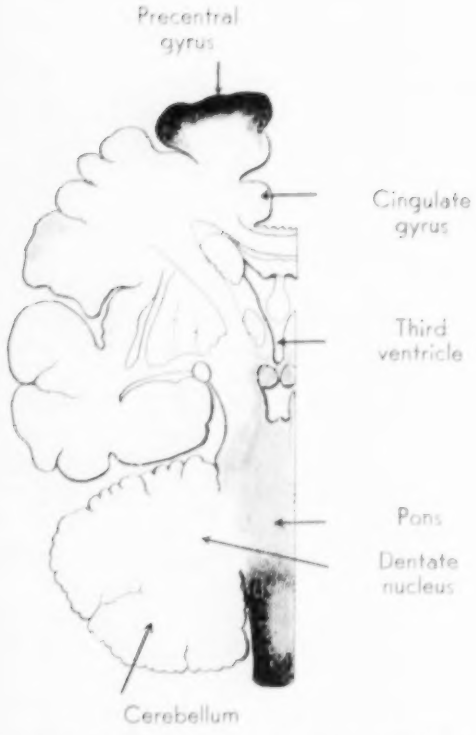

Fig. 1. General distribution of lesions of poliomyelitis. Severity of lesions indicated by gradations from gray to black.

1947 through 1952,[39] with a 60-40 ratio respectively in those under ten and those over ten years of age.

Further, it is felt that poliomyelitis as with any other disease spread by human association, the step-up in speedy transportation of man and his foodstuffs has hastened the world-wide distribution. There is no reason to believe that this disease will not penetrate to all parts of the inhabited areas, land or sea!

Paul[11] states "it is my belief that most cases of polio though not necessarily all are acquired as a result of a susceptible person coming in contact with an individual in the infectious or infective state, regardless whether he or she shall be suffering from an overt case of paralysis, paresis, non-paralytic, an abortive type or an inapparent infection. There is some evidence to believe that the severe paralytic cases are the most dangerous spreaders of infection; but it is the inapparent form of infection which makes up the bulk of the so-called 'healthy carriers'". These remarks of his appear to be confirmed by other workers.[38, 27, 9]

It can be cautiously stated at the end of 1954 that those countries which find themselves having the highest standards of sanitation and low infant mortality rates seem to be running the highest polio incidence rates! The higher infant mortality, the crowding, the primitive sanitation of the "have-not" areas facilitate the spread of the virus with infants coming in early and frequent contact with all three types of virus. The disease therefore smolders there sporadically breaking through, with epidemic spread unlikely because of the high level of cross-immunities. With the advantages of sanitary engineering and plumbing, the chances and risks of contact with viral contaminations at an early age diminish. In these areas and districts many children reach the ages of 5 to 10 without having acquired infection or immunity and are therefore ripe for epidemic waves which sweep through these susceptibles.

Epidemiology In epidemic times, the prevalence of recognized cases within an alerted section of the country runs approximately 3 in a thousand population. The actual incidence is a lot higher, with inapparent infections. The mortality rate varies by year, area, and type from 1 to 3 per 100,000 population.

Either there has been a diminution in the virulence of polio or better reporting of milder and abortive cases, for there has been a drop in mortality and in the severe paralytic types. This has been observed widely in the past few years.

Polio is somewhat seasonal in the temperate areas, occuring mostly in the summer and fall. The range is wider in the more tropical climes.

It is the close rather than the casual contact who develops the disease. It was found[28] that the risk was greater in household contacts of paralytic cases, with the severity of the following cases decreasing as the interval between the initial and subsequent cases increased. Further, the later cases tended to be non-paralytic. These findings were corroborated[29] by further studies in the field of multiple polio in households.

Therefore, two types of infectious possibilities can be postulated:[30] the first is that the probability that more than one case will develop in a family is greater when the initial case is paralytic than when it is non-paralytic; and the second is that the prognosis is worse for both the lighter and the paralytic groups that might develop if the initial case is paralytic. Along with these, the age group under 10 years show a markedly increased susceptibility.

Manner of Spread Among reviewers[9, 10, 11] of the problem, it is felt that droplet-infection must be minimized. Fecal contamination of food, filth, dust, hands and mouth has come to the fore as the most likely spreader of the virus.

It was observed[31] that when clinical and family workers around polio cases observed scrupulous hand-washing and cleanliness, no new cases developed. It is no new finding that filth-flies easily become contaminated with fecal matter and have been implicated in other filth-borne diseases.

Immunity Response and Research Apparently, experimental studies[1] reveal that the essential injury from the polio virus follows closely upon the initiation of infection in which case the visible pathology develops apparently independently of viral multiplication. They are not interdependent then.

Reports[16, 21] on the complement-fixation test as it relates to the immune-factors and to specificity of diagnosis show that the test has uses from both angles. It is of some limited value in the laboratory only, until perfected, for the serodiagnosis of the disease and for the study of antibody response to vaccination and infection.

Now, of children vaccinated against Type I, 60% showed a close vaccination titer rise to Types I, II or III. Some gave antibody responses to more than one type. Confusing the issue for investigators is that many individuals currently possess inoculation neutralizing antibodies to some degree or other.

Typical discrete lesions were found in experimental animals' ganglia supplying the mouth and pharynx after simple feeding of virus. The interesting possibility has been suggested that under natural conditions of exposure with only small amounts of attenuated virus arti-

Fig. 2. Some of the Active and Passive Tests Aiding the Diagnosis of Acute Poliomyelitis (after Alex J. Steigman, M.D.)

1. Tripod sign.

2. Kiss-the-knee test: hamstrings are tense.

3. Head drop sign.

4. Support of head to distinguish involuntary from voluntary rigidity.

A

B

5. Supine (A) versus prone (B) postural test for rigidity: nuchal rigidity elicited in supine position. In prone position rigidity disappears in poliomyelitis, but generally persists in pyogenic meningitis.

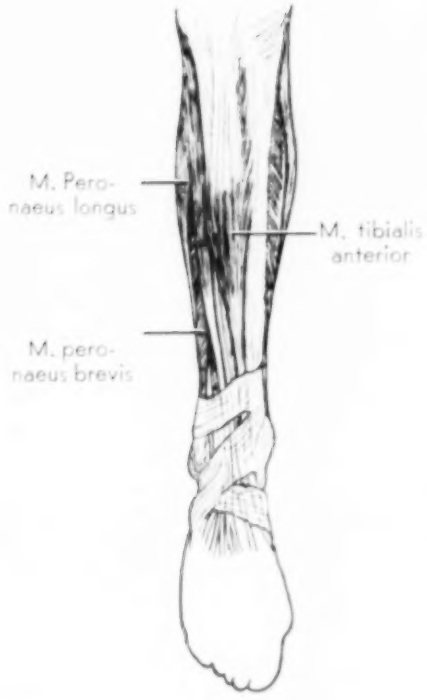

Fig. 3. Muscles of the leg involved in paralytic cases. In order of frequency the anterior tibial is first and the peroneal second.

ficially-induced immunity may block final entry at the portals by virtue of the induction of antibodies in the overlying and supplying neural regions.

Meanwhile, Van Riper[43] has stated in reference to the extensive field trials of the polyvalent viral vaccine perfected by Salk and his co-workers that titer values have remained high.

The possibility is of course that complete protection may occur in a high percentage of vaccinated children. In others not completely protected a considerable modification of the disease may occur. While this is hopeful news, not enough children have been vaccinated, if all this proves true, to affect to any great extent, epidemic outbreaks in various parts of the country.

Meanwhile, final evaluation on the field trials in mid-1954 is being undertaken by Francis et al. at the University of Michigan and the reports may be expected sometime in the late spring of 1955.

Enders[22] feels that a live, attenuated viral vaccine will prove to be the ideal immunizing agent against polio, as it has occurred against smallpox and yellow fever. Until this development occurs the use of a dead vaccine may prove only partially effective. He points to the reduction of virulence in an experimental strain of Type I to such an extent that it failed to cause paralysis where it was inoculated into the brain of susceptible M. rhesus monkeys in large amounts. This appeared to show a decline in virulence of the attenuated strain to the order of one in one million!

By November of 1954[47] reviewers summarized their findings on the use of gamma globulin by stating that it was not the final answer. However, it did have some use in epidemic times for large-scale passive-immunization of a whole district. The search for the ideal immunizing agent may still prove to be a long and complicated task, especially for the effective live vaccine, devoid of risk.

Predisposing Factors Whether the disease becomes clinically apparent or no appears to be related to the factors of fatigue and chill. This relationship has been confirmed many times over by many clinic workers, as well as by the epidemiologist. It has been noted in adults especially.

Pregnancy appears to predispose

women to the clinically apparent infection. Here, gamma globulin appears to have a proper preventive passive-immunity role to play.

Tonsillectomy and other forms of naso-oral surgery have been implicated previously as increasing the incidence of the disease. This staatement has also been made in reference to various immunizing procedures used by the medical practitioner, and to the effects of local trauma to limbs. Yet, is now becoming accepted as the result of adequate studies[3] that tonsillectomy does not predispose an individual to the disease, per se, but that it increases the liability fourfold of an infected person developing the more serious manifestations of the bulbar form of polio: this is regardless of the time that has elapsed since the time of operation and has not any relationship to age.

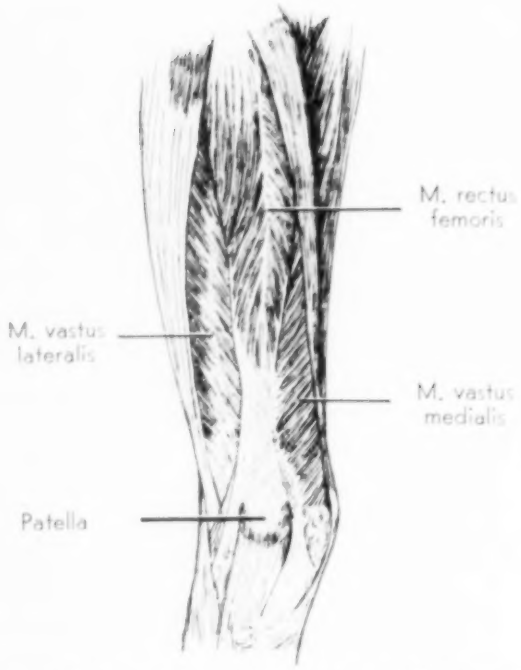

Fig. 4. The quadriceps extensor group. Composed of the rectus femoris joining with the vastus lateralis, the vastus medialis and the vastus intermedius at the patella are third in the order of frequency.

A theory advanced is that the involvment of the bulb in tonsillectomized individuals is due to the easier access of the virus through transmissal of the unguarded ninth and tenth cranial nerves. No further evidence was found as to the effect of tonsillectomy in altering susceptibility to clinically recognizable polio.

The possibility that immunizing injections or local trauma might "fix" a polio infection to a limb has not been completely routed.

Incubation Period This may vary anywhere from a few days up to four-five weeks. Usually, it has been determined to be about 4-7 days.

Clinical Course Usually the disease follows what has been described as a biphasic, bactrian or dromedary type in its course. Actually, there are three phases in polio: (1) The First, Minor or Prodromal Stage (2) The Asymptomatic or Latent Stage and (3) The Febrile, Spastic, Paretic or Paralytic Stage.

(1) In the Prodromal Stage which runs about 2-5 days there is a low-grade fever, rarely above 102 degrees F., headache which can be frontal, occipital, or migrainous in nature with fleeting neck stiffness or complaints referrable to any part of the back or the limbs, and various respiratory or gastro-

intestinal signs and symptoms.

During this time, the examiner may witness drowsiness, a general irritability, occasional positive Kernig's or Brudzinski's sign, and unreliable fleeting changes in the reflexes. Spinal fluid findings are also unreliable with some pleocytosis and increased protein observed.

It must not be forgotten that many cases of polio may not even experience more than one of the above findings. This is the INAPPARENT CASE OF POLIO, usually only found by experimenters, epidemiologist or research workers by inoculation of pharyngeal or stool washings.

Other fortunates may only experience the Prodromal Stage and are the ABORTIVE POLIO CASES. These are spotted by the alert family doctor often in epidemic times.

The care of these cases usually involves adequate bedrest and nursing comfort, freedom from anxiety by reassurance from the medical practitioner, the liberal use of analgesics in various combinations; and the occasional careful employment of sedation. Little more than these measures are necessary.

(2) The Latent or Asymptomatic Stage usually runs its course in 2-5 days. The fever drops. The complaints disappear and the patient wants to get up and to "get going". To the concerned physician, especially in epidemics, this is not wise unless the patient remains afebrile for seven days. The patient is safe then to go about his business or other activities.

(3) Febrile and Spastic or Paretic or Paralytic Stage comes on suddenly or insidiously with pyrexia anywhere from 100°F. upwards. This is the time of CNS and spinal cord involvement, even (as has been demonstrated experimentally) in the non-paralytic[10] cases. This involvement often affects the cerebrum or cerebellum or both in some degree or other.[7, 8]

The signs and symptoms may be protean in their manifestations or occur in various odd combinations.[12, 15, 49] Fever is present in most cases during the acute stage. Headache of almost any type is a frequent complaint. Muscle pain, spasm and tenderness are often seen with stiff or tired neck and back. The observant physician often may make his diagnosis on walking into the sickroom by seeing his patient sitting up in bed in the typical "tripod position", with his hands back on the bed supporting him in an inclined sitting posture.

The presence or absence of the reflexes is unreliable as is the spinal puncture which proves its usefulness only for the differential diagnosis. It may not be wise to omit its use however, because of the confusion of poliomyelitis with meningitis, encephalitis, polyneuritis and viral disease of the central nervous system.

Drowsiness occurs often enough to confuse the doctor. There is not often the same type or degree of somnolence as is seen in the encephalitides. The patient responds easily if quite irritably.

Vomiting is another sign seen, especially with the gastro-intestinal group of symptoms. There is an occasional diarrhea but commonly constipation appears and is often annoyingly persistent.

Pain and weakness may occur anywhere in the trunk or the limbs. There may be difficulty in sitting, lying,

breathing, holding the head erect, or turning in or out of bed.

The patient who develops paralysthesias is not common. When seen, the diagnosis of polio should be made cautiously and tentatively. Twitching of muscles does occur in one or groups of muscles however. Tenderness in these may be elicited by finger pressure.

When the disease is arrested in this part of the stage, where it may remain with fever for about a week, and without fever but with spasm for several weeks, it is labelled as

Non-Paralytic Polio Not until the fever falls and remains normal should a case of polio be so labelled as paralysis may come on at any time suddenly during pyrexia. Usually, if paralysis does take place, it will take place within one week.

The patient who develops paralysis usually has the same train of syndromal events but they are usually severer and of shorter duration before the onset of the loss of innervating power. Once paralysis begins, most muscles that become affected usually do so within forty-eight hours.

It is a sequential result of the viral injury to the anterior motor horn cells in the spine, resulting in lower motor neurone disturbance and interference in conduction of impulses, that finally causes the flaccid paralysis.

The Paralytic Polio Case must be carefully watched for further paralysis, no matter how slight and spotty the early paralysis may be. Not until the temperature drops to normal—and stays there, should vigilance be relaxed. Occasionally, an ascending paralysis occurs not too infrequently going on to a fatal termination. Some observers caution us to watch those patients exhibiting deltoid paralysis, as they feel that these may develop respiratory paralysis, believing that paralysis spreads centrifugally from the damaged cells.

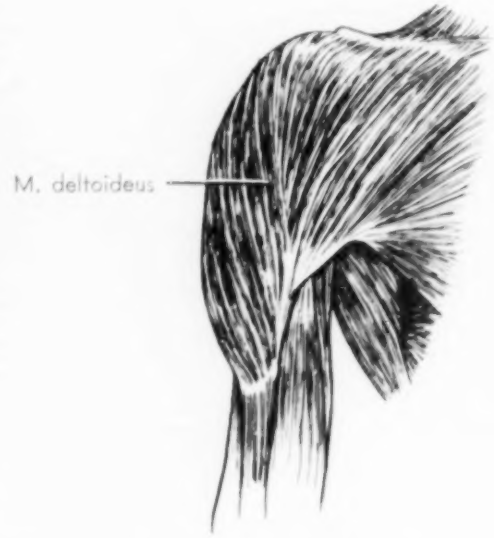

Fig. 5. The deltoid muscle in the upper extremity is fourth in the order of frequency.

The muscles involved in paralytic cases change with the epidemics apparently. No reason is known at present for selection. However, the lower extremeties show the greatest incidence of involvement.

The order of frequency of paralysis appears to be in the following order: (1) anterior tibial (2) peroneal (3) the quadriceps extensor group and (4) the deltoid in the upper extremity.

It would be wise to defer muscle loss evaluation until at least 24 hours after the patient is afebrile to prevent patient exhaustion — and POSSIBLY FURTHER PARALYTIC DAMAGE. The grading of affected muscles on a

quantitative basis had best be left in the hands of the orthopedist or physiatrist specialist. However, quick, clinically-apparent appraisal can and should be done by the family physician before permitting a panicky family to dissipate its funds in some far-distant metropolitan center.

There is an infrequent type which appears in some epidemics: the encephalitic. This concept has been based on pathologic findings in terminal cases.[7, 8, 16] Here, the patient appears quite ill, drowsy with mental confusion yet arousing easily, difficult to manage, with convulsions extremely rare. Many of these cases often show complete recovery with no paralysis or residual damage to the brain. Often, severe transient alarming hypertension is observed, more so than in the fleeting rises in blood pressure seen in the others, except for the respiratory and bulbar types.

Diagnosis We now come to the vexatious nub of the question: "Is It Polio"?, so often asked of the perplexed physician.

If the various stages are kept in mind and the family doctor remains on the alert for the sporadic case, as well as those in the epidemic periods, he has added some help to his diagnostic armamentarium . . . even if not much specifically! We still do not have definitive, easy tests.

Other points to remember are that young children are often cheerful while the pubertal, adolescent and adult are depressed. Temperatures rarely range over 103 degrees; and the patient is far too drowsy often for the low pyrexia. While often drowsy, he may be awakened easily to alert attention, in contrast to the case of encephalitis. The blood pressure often is raised and not commensurate with the rest of the clinic picture. There may be alteration in cranial nerve responses. Occasionally, a spot diagnosis has been made on the patient who walks stiffly into the office with a swayback, his head and shoulders drawn back to maintain the spine as erect as possible, not in too much pain.

Laboratory studies are needed mostly for difficult problems in diagnosis, and to eliminate other types of central nervous system involvements. When in doubt do not hesitate to do spinal puncture. It does no damage and it is wise to check the sediment and to get cultures made for other organisms. The Complement-Fixation Test may be helpful when it is available in the area.

It must not be forgotten that Poliomyelitis is underdiagnosed ordinarily, and over-diagnosed BY AS MUCH AS 50%[9, 49] during epidemics! It needs to be differentiated from scurvy, meningitis, diphtheria, tachycardia, hysteria, brain tumor, and a host of others.

Prognosis While some writers[37] have emphasized the moot point that no case of polio occurs without some type of residual paralysis or paresis, it is well known[47] that a muscle recovers about 60% of its strength by the end of three months, with 30% within six months so that a cautious hopeful tone may be adopted with anxious relatives early in convalescence if returning power is seen in the paralytic group. Many early cases seen during epidemics never reveal anything except some transient weakness in a limb or muscle.

However, prognosis should be guarded until all fever has subsided for at least twenty-four hours, especially for possibilities of respiratory or bulbar in-

breathing, holding the head erect, or turning in or out of bed.

The patient who develops paralyesthesias is not common. When seen, the diagnosis of polio should be made cautiously and tentatively. Twitching of muscles does occur in one or groups of muscles however. Tenderness in these may be elicited by finger pressure.

When the disease is arrested in this part of the stage, where it may remain with fever for about a week, and without fever but with spasm for several weeks, it is labelled as

Non-Paralytic Polio Not until the fever falls and remains normal should a case of polio be so labelled as paralysis may come on at any time suddenly during pyrexia. Usually, if paralysis does take place, it will take place within one week.

The patient who develops paralysis usually has the same train of syndromal events but they are usually severer and of shorter duration before the onset of the loss of innervating power. Once paralysis begins, most muscles that become affected usually do so within forty-eight hours.

It is a sequential result of the viral injury to the anterior motor horn cells in the spine, resulting in lower motor neurone disturbance and interference in conduction of impulses, that finally causes the flaccid paralysis.

The Paralytic Polio Case must be carefully watched for further paralysis, no matter how slight and spotty the early paralysis may be. Not until the temperature drops to normal—and stays there, should vigilance be relaxed. Occasionally, an ascending paralysis occurs not too infrequently going on to a fatal termination. Some observers caution us to watch those patients exhibiting deltoid paralysis, as they feel that these may develop respiratory paralysis, believing that paralysis spreads centrifugally from the damaged cells.

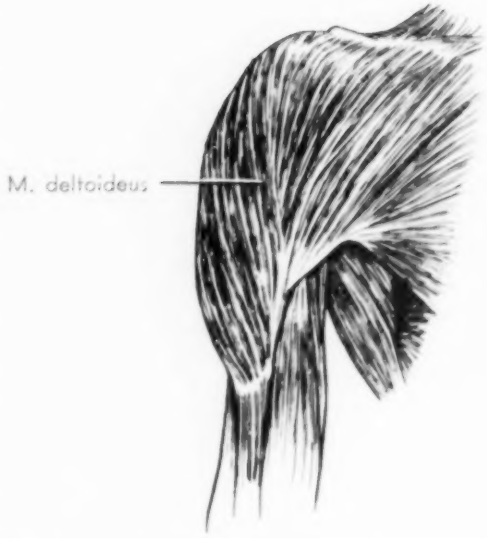

Fig. 5. The deltoid muscle in the upper extremity is fourth in the order of frequency.

The muscles involved in paralytic cases change with the epidemics apparently. No reason is known at present for selection. However, the lower extremeties show the greatest incidence of involvement.

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However, prognosis should be guarded until all fever has subsided for at least twenty-four hours, especially for possibilities of respiratory or bulbar in-

volvment.

Often the future welfare of muscle balance and repair, restoration of maximum functional capacity possible within the limits imposed by the actual damage to the anterior horn motor cells in the spinal cord, requires a logical sequence of carefully-planned steps. In the average case, these are not beyond the excellent, integrated skills of the family doctor who does not try too much and too quickly. Chronologically, this treatment program has been well defined and much aid can be secured through local health agencies and chapters of the National Foundation.

Electromyography may be used to clarify the prognosis in the afebrile convalescent time of severe or widespread paralysis.[25]

Complications Where pregnancy was complicated by polio in cases at the Mayo Clinic,[26] the maternal mortality rate was 6%, and the fetal loss was 32%. These writers feel that pregnancy increases the susceptibility of the individual to the disease. They state that the anesthesia of choice for vaginal delivery is pudendal block. For cesarean section, local abdominal block is preferred.

The instance of miscarriage may be increased considerably as a result of polio complicating the first trimester of pregnancy. Polio may also occur in the infant in the neonatal period and must be watched for carefully.

Actually, all forms of paralysis are considered to be complications of polio; but recent usage has come to consider respiratory and bulbar paralyses as the major disasters of the paralytic stage. These and their management will be discussed separately and in passing, as they often are transferred as cases for care to a hospital team—of which he is not, but should be a part.

Other conditions which may complicate any stage of polio include chronic night pain, constipation and abdominal distension, urinary retention, nutritional and electrolytic deficiencies, airway obstruction, disorders of central respiratory or vasomotor centers, and severe emotional disturbances. These will be dealt with under the general topic of Medical Management.

Pathology of Polio Various studies[1, 6, 7, 8, 16, 22] reveal that the spread of the viral organism is neurotropic. That is to say that regardless as to whether the organism is ingested with fecal-contaminants by flies, filth, water, or food or inhaled from phyaryngeal droplet carriers, the virus has been demonstrated as a viremia in experimental animals prior to the evolution of clinical signs and symptoms. This then is followed by a perivascular settling infiltration around the motor anterior horn cells in the spinal cord especially, with lymphocytic engorgement. Gross morbid appearance of the cord or brain may show anything from little change through to meningeal irritation and edema. Small areas of softening may be noted. Histologically, the large motor cells of the anterior horns appear to be the most susceptible to injury and often show pyknosis, cloudy swelling, and autolysis. Often, the internuncial cells may be affected. In bulbar polio, the most extensive lesions are in the medulla and upper spinal cord. When lesions occur in the brain, they are seen in the reticular formation of the hindbrain, the upper nuclei of the cerebellum and the vestibular nuclei,[7, 8] and the motor area of the precentral gyrus.

To be continued next month

Indications for Local Hydrocortisone Therapy

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Hydrocortisone free alcohol and hydrocortisone acetate, incorporated in suitable vehicles, have proven value in the local management of selected dermatoses. Since the introduction of local steroid therapy there has been a tendency on the part of physicians in general to utilize these materials in the therapy of all skin eruptions. In previous publications, stress has been laid on the fact that the greatest value from local hydrocortisone therapy can be derived from using it only in the treatment of conditions where its effectivity has been demonstrated. [1, 2, 3, 4, 5] Atopic dermatitis, other eczematous eruptions, dermatitis venenata, pruritus ani, and pruritus vulvae are improved by local application of hydrocortisone free alcohol or hydrocortisone acetate; however, relapses are frequent when the applications are discontinued. The mode of action of these compounds, when applied locally, has not been determined although Sulzberger has postulated the theory that the beneficial effect may be due to the local hormonal action of the steroid itself on the skin.[1]

This study was conducted in an effort to determine the value of these compounds in the treatment of various dermatoses in a large series of patients. By a statistical survey the authors have attempted to determine which vehicle is the most efficacious, whether hydrocortisone free alcohol, or hydrocortisone acetate possesses superior action, the value of combined local steroid-antibiotic therapy, the optimum concentration of the steroid and the indications and contraindications for the topical application of these compounds.

Preparations Studied

HYDROCORTISONE FREE ALCOHOL PREPARATIONS

Oily base #1—Contains 0.5%, 1% or 2.5% hydrocortisone in white mineral oil, wool fat, and white petrolatum.

From the Department of Dermatology, University of Maryland School of Medicine.

This study was supported by grants-in-aid from the Charles Pfizer Co., Brooklyn, N. Y., and the Upjohn Co., Kalamazoo, Michigan. Supplies were furnished by the Charles Pfizer Co., The Upjohn Co., The Merck Co., Schering Corp., Abbott Laboratories, Sharp and Dohme Co., and the J. B. Roerig Co.

Oily base #2—0.5%, 1% or 2.5% hydrocortisone in multiwax, cholesterol, white mineral oil and white petrolatum.

Greaseless base #1—0.5%, 1.0%, or 2.5% hydrocortisone in sodium lauryl sulfate, stearyl alcohol, cholesterol, mineral oil, methyl parasept, propyl parasept, propylene glycol, cetyl alcohol, petrolatum, and water.

Greaseless base #2—0.5%, 1.0% and 2.5% hydrocortisone in zinc stearate, polyethylene glycol, propylene glycol, and distilled water.

Greaseless base #3—1.0% hydrocortisone in zinc stearate, polyethylene glycol, 1500, polyethylene 6000, propylene glycol, and water.

Lotion base #1—0.5%, 1.0% or 2.5% hydrocortisone in glycerol, isopropanol, sodium methylparahydroxybenzoate, diglycol, stearate, petrolatum, wax and distilled water.

HYDROCORTISONE ACETATE PREPARATIONS

Oily base #1—0.5%, 1.0% or 2.5% hydrocortisone acetate in mineral oil and petrolatum.

Oily base #2—0.5%, 1.0%, or 2.5% hydrocortisone acetate in multiwax, cholesterol, mineral oil and petrolatum.

Oily base #3—0.5%, 1.0%, or 2.5% hydrocortisone acetate in mineral oil, wool fat, and petrolatum.

Greaseless base #1—0.5%, 1.0% or 2.5% hydrocortisone acetate in zinc stearate, polyethylene glycols, propylene glycol, and distilled water.

Greaseless base #2—0.5%, 1.0% or 2.5% hydrocortisone acetate in sodium lauryl sulfate, stearyl alcohol, cholesterol, mineral oil, methyl parasept, propyl parasept, propylene glycol, cetyl alcohol, petrolatum, and water.

Greaseless base #3—0.5%, 1.0%, or 2.5% hydrocortisone acetate in zinc stearate, propylene glycol, carbowax 1500, and carbowax 4000.

Lotion base #2 — Hydrocortisone acetate 1.0% in diglycol stearate, cetyl alcohol, lanolin, petrolatum, olive oil, tween 40, aseptoform, borax powder, dupanol, glycerin, sulfatate B, oil lilac flower, menthol, alcohol, and distilled water.

HYDROCORTISONE ANTIBIOTIC PREPARATIONS

#1—Oxytetracycline 3% plus hydrocortisone acetate 1.0% in mineral oil and petrolatum.

#2—Tetracycline 3% plus hydrocortisone acetate 1.0% in mineral oil and petrolatum.

#3—Neomycin 0.5% plus hydrocortisone acetate 1.0% in mineral oil multiwax, cholesterol, and white petrolatum.

#4—Neomycin 0.5% plus hydrocortisone acetate 1.0% in mineral oil and white petrolatum.

#5—Neomycin 0.5% plus hydrocortisone acetate 0.5% or 1.0% in

butylparahydroxy benzoate, methyl paraben, multiwax, cholesterol, mineral oil and white petrolatum.

#6—Neomycin 0.3% and bacitracin (1000 units per gram) plus hydrocortisone 1.0% and 2.5% in an oily base.

#7—Erythromycin 1.0% plus hydrocortisone acetate 1.0% or 2.5% in a mineral oil-petrolatum base.

#8—Lotion base #3—Neomycin sulfate (Flushed 20%) plus hydrocortisone acetate 0.5% in a lotion base consisting of methylparaben, n-Butyl-p-hydroxybenzoate, propylene glycol, polysorbate, tegacid regular, spermaceti, deionized water.

#9—Neomycin sulfate 0.5%, bacitracin, polymyxin B 0.1%, butylparahydroxybenzoate 0.18%, plus hydrocortisone acetate 1.0%, methylparaben 0.02%, in a mineral oil-petrolatum base.

#10—Lotion base #4—Neomycin sulfate (Flushed 20%), hydrocortisone acetate 1%, methylparaben, n-Butyl-hydroxybenzoate, propylene glycol, polysorbate 80, tegacid regular, spermaceti, deionized water.

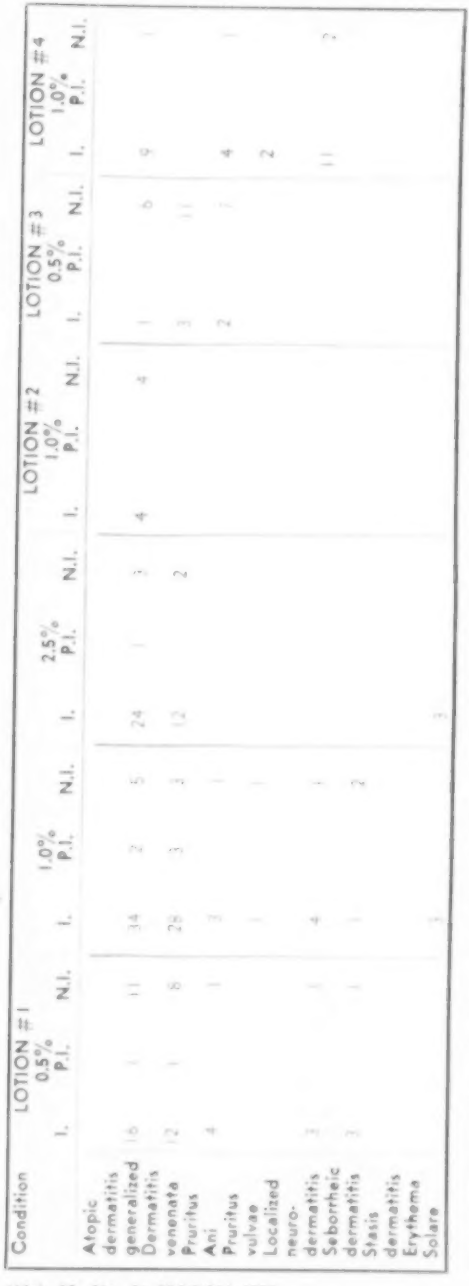
Patient Selection This study was conducted on 1655 patients seen in the out-patient department, hospitalized cases, and private patients. Where follow-up was incomplete the case was dropped from the study. Diagnoses were confirmed by clinical consultation, and laboratory studies whenever necessary. Age and sex did not influence the study and are not considered in the results and summary tables.

Method of Treatment The ointment, cream or lotion was supplied to the patient who was instructed to apply a thin coating over the involved area twice daily. For the duration of treatment with hydrocortisone free alcohol or hydrocortisone acetate preparations, all other local or systemic therapy was discontinued and the use of soap or other cleansing compounds was forbidden. The paired comparison method was used in several cases of extensive atopic dermatitis, placebo ointment or lotion being applied to one part of the body and the preparation containing the steroid to another. In an attempt to learn the optimum concentration of hydrocortisone free alcohol or hydrocortisone acetate, treatment was instituted in one series with a concentration of 0.5% and if it proved to be ineffective the 1.0% preparation was used; if this failed to produce the desired result the 2.5% compound was applied. In another series treatment was initiated with the 2.5% lotion or ointment and after improvement was noted the concentration was reduced to 1.0% or to 0.5%. Similar series were studied with both hydrocortisone free alcohol and hydrocortisone acetate to determine which compound possessed the greatest efficacy. The preparations containing hydrocortisone free alcohol or hydrocortisone acetate plus an antibiotic were used in all cases where there was secondary infection complicating the original dermatosis and also in uncomplicated dermatoses. In a series of 50 patients three or more preparations were used at different times to determine which was the more efficacious. Individuals in this group were treated with the hydrocortisone preparations only and also steroid-antibiotic preparations regardless of the presence or absence of infection.

Summary Chart (Chart I)

Preparation	Total cases	Concentration of steroid. No. of patients 0.5%	1.0%	2.5%	Adverse reactions	Efficiency in responsive dermatoses 0.5%	1.0%	2.5%	Comment
Hydrocortisone Free Alcohol									
Base #1 oily	219	38	57	124	4	B	A	A	
Base #2 oily	75	30	30	15	0	B	A	A	
Base #1 greaseless	153	25	76	52	14	D	B	A	
Base #2 greaseless	50	10	25	15	3	D	B	A	
Base #3 greaseless	51		51		2		B		Only concentration used
Base #1 lotion	199	62	92	45	23	B	A	A	
Hydrocortisone Acetate									
Base #1 oily	70	25	35	10	2	B	A	A	
Base #2 oily	50	11	30	9	0	B	A	A	
Base #3 oily	81	10	52	19	2	B	A	A	
Base #1 greaseless	60	15	37	8	14	D	B	A	
Base #2 greaseless	50	15	25	10	2	D	B	A	
Base #3 greaseless	30	5	18	7	1	D	B	A	
Base #2 lotion	8		8				B		
Hydrocortisone-Antibiotic									
#1 Oxytetracycline	212		212		4		A		Only concentration used
#2 Tetracycline	92		92		2		A		" "
#3 Neomycin	35		35		1		A		" "
#4 Neomycin	40		40		1		A		" "
#5 Neomycin	30	10	20		0	B	A		" "
#6 Neomycin-bacitracin	30		30		0		A		" "
#7 Erythromycin	18		9	9	0		A	A	" "
#8 Neomycin-in lotion (Base #3)	30	30			5	D			" "
#9 Neomycin-bacitracin polymyxin	42		42		1		A		" "
#10 Neomycin in lotion (Base #4)	30		30		2		A		" "

Conditions Benefited by Hydrocortisone Lotion (Chart 2)



Results Sixteen hundred and fifty-five patients with various dermatoses were included in this study (Chart 1). Seven hundred and fifty-seven were treated with preparations containing 0.5%, 1.0% and 2.5% concentrations of hydrocortisone free alcohol and 349 patients were treated with various local preparations containing 0.5%, 1.0% and 2.5% hydrocortisone acetate. The results of this study indicate that there is no appreciable difference between the hydrocortisone free alcohol or hydrocortisone acetate when prepared for local application in a suitable base. The oily base ointments proved to be superior to the greaseless base ointments as demonstrated by comparing the efficiency of the various preparations containing 0.5% of the steroid in the treatment of responsive dermatoses. In an oily medium the 1.0% concentration of the steroid proved to be as effective as 2.5%. There was a decrease in efficiency when 1.0% of the steroid was incorporated in a greaseless base medium. The adverse reactions noted (Chart 1) were due primarily to local irritative phenomena and the more complicated the base, the higher the percentage of reactions. Patch tests with the bases, in individuals who noted reactions, produced erythema but no vesiculation. No serious side effects were noted with any of the preparations used and there was no evidences of systemic reactions. Two individuals who de-

Key: To charts 2, 3, 4 and 5. I.—Improved P.I.—Partially Improved N.I.—Not Improved

veloped cutaneous reactions had positive patch tests to lanolin, an ingredient of one of the oily ointment bases. The remaining 559 patients were treated with a combination of the steroid and one or more of the antibiotics in one of several oily bases or a lotion base. The broad spectrum antibiotic combinations with hydrocortisone, the combination of neomycin-bacitracin-polymyxin with hydrocortisone, and the erythromycin combination with hydrocortisone proved to be superior preparations. The incidence of adverse reactions with this series of compounds was very low.

Lotion bases #1 and #4 proved to be superior preparations. One per cent hydrocortisone or hydrocortisone acetate in these bases produced temporary complete involution of lesions in 43 of 49 patients treated for atopic dermatitis, and partial involution of lesions in two of the others. Sixteen of 28 patients with similar symptoms responded temporarily to treatment with lotion containing 0.5% hydrocortisone (Base #1). Twenty-four of 28 patients treated with 2.5% hydrocortisone lotion for atopic dermatitis showed temporary complete involution of the lesions, and one other was partially improved. More parmanent results were obtained in cases of contact dermatitis when the cause of the dermatitis was discovered and eliminated. In numerous instances it was possible to initiate therapy with 1.0% hydrocortisone lotion and subsequently to reduce the concentration of the steroid to 0.5%. These results indicate that there is a place for both 0.5% and 1.0% preparations in the physician's armamentarium. There is no appreciable difference between the action of the 2.5% lotion and 1.0% lotion in the treatment of atopic dermatitis and contact dermatitis. One per cent hydrocortisone or hydrocortisone acetate in lotion bases #1 and #4 also proved to be of value in producing temporary relief of symptoms in pruritus ani, pruritus vulvae, localized neurodermatitis, seborrheic dermatitis, stasis dermatitis, and erythema solare.

Preparations of hydrocortisone free alcohol and hydrocortisone acetate in greaseless bases (Chart 3) proved to be of value in producing temporary complete involution of lesions in patients with neurodermatitis, dermatitis venenata, pruritus ani, pruritus vulvae, generalized atopic dermatitis, stasis der-

Conditions Benefited by Hydrocortisone in Greaseless Bases (Chart 3)

Condition	CONCENTRATION OF HYDROCORTISONE OR HYDROCORTISONE ACETATE								
	0.5%			1.0%			2.5%		
	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.
Localized neurodermatitis	18		10	53	15	8	35	1	3
Dermatitis venenata	9	2	7	32	4	4	16	10	2
Pruritus Ani	4	1	2	15	5	3	10	1	1
Pruritus Vulvae	3	1	2	12	4	3	8	2	1
Generalized atopic dermatitis	2		2	45	5	8	2		
Stasis dermatitis	2	1	3	6	4	1			
Balanitis				1		1			
Insect bites				2		1			

Conditions Benefited by Hydrocortisone in Oily Base Ointments (Chart 4)

Condition	CONCENTRATION OF HYDROCORTISONE OR HYDROCORTISONE ACETATE								
	0.5%			1.0%			2.5%		
	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.
Localized neurodermatitis	21		14	59	3	4	49	8	5
Dermatitis venenata	15		9	35	2	4	40	10	4
Pruritus Ani	12		7	13	1	3	15	2	2
Pruritus vulvae	6		3	12	1	2	12	2	2
Generalized atopic dermatitis	15		12	31	3	3	8	2	2
Stasis dermatitis				8	11	2	5	1	1
Balanitis				2		1	4		1
Insect bites				2		2	2		

matitis, balanitis, and insect bits. The 0.5% concentration of the steroid in the greaseless bases proved to be effective in 60% of the responsive dermatoses treated. The 1.0% concentration was less effective than the 2.5% in this series of patients.

The oily base preparations of hydrocortisone and hydrocortisone acetate (Chart 4) proved to be effective preparations in producing temporary involution of lesions in cases of localized neurodermatitis, dermatitis venenata, pruritus ani, pruritus vulvae, generalized atopic dermatitis, stasis dermatitis, balanitis, and insect bites. The 0.5% concentration of the steroid in an oily base proved to be effective in 65% of the responsive dermatoses treated. There was no appreciable difference between the action of the 1.0% and the 2.5% concentrations when dispensed in an oily medium. Both of these percentages proved effective in 88% to 91% of conditions which respond to local treatment with hydrocortisone and hydrocortisone acetate. In many instances it was possible to initiate treatment with one of the higher concentrations and then reduce the percentage to 0.5%. In many individuals who obtained a satisfactory result it was possible to reduce the frequency of the applications to once daily, once every other day, and eventually to once every third day. This was especially true of patients with pruritus ani and pruritus vulvae.

Combinations of hydrocortisone and hydrocortisone acetate with oxytetracycline, tetracycline, erythromycin, neomycin, neomycin-bacitracin and neomycin-bacitracin-polymyxin dispensed in oily base ointments and two different lotion bases proved to be as effective as the other hydrocortisone and hydrocortisone acetate preparations in the treatment of dermatoses (Chart 5). These compounds were of especial value in the treatment of dermatoses when there was complicating secondary pyogenic infection. The fact that the antibiotic does not inhibit the action of the steroid was demonstrated by using the ointments or lotions on proven responsive dermatoses which were not secondarily infected. The fact that the steroid does not inhibit the action of the antibiotic was demonstrated by the prompt response of the pyogenic infections to the applications. Steroid-antibiotic ointments and lotions

Conditions Benefited by Combined Local Steroid-Antibiotic Preparations (Chart 5)

Condition	Oxytetracycline plus 1.0% hydrocortisone			Tetracycline plus 1% hydrocortisone			Neomycin plus 0.5% hydrocortisone			Neomycin Bacitracin plus 1% HCA			Erythromycin plus 1.0% or 2.5% Hydrocortisone Acetate			Neomycin Bacitracin Polymyxin B plus 1.0% HCA			Neomycin plus 1.0% HCA in lotion base		
	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.	I.	P.I.	N.I.
Atopic Dermatitis	61	6	5	30	3	2	3	1	3	17	1	2	5			10	1	2	9		1
Dermatitis Venenata	44	3	5	17	2	2	4	1	3		1					4		1			
Perianal Eczema	29	2	2	11	1	1	1		2	3		1	4		1	5		1	4		1
Eczema of the Vulva	10	2	1	4	1	1	1		1	1		1				5		1	2		
Seborrheic Dermatitis	13	1	3	1			3	1	1	2			3		1	6		2	11		2
Stasis Dermatitis	15	5	5	12	2	2	2	1	2				2		1	3		1			

proved to be of special value in the treatment of secondarily infected dermatitis venenata. There was a low incidence of adverse reactions to any of the preparations. The optimum concentration of the hydrocortisone or hydrocortisone acetate proved to be 1.0%.

Patients with psoriasis, lichen planus, chronic discoid erythematosus, morphea, keratosis follicularis, epidermophytosis, pustular bacterid, alopecia areata, herpes simplex and verruca vulgaris did not show any response to treatment with any of the preparations of hydrocortisone or hydrocortisone acetate (Chart 6).

Reactions (Chart 1) No serious adverse reactions were noted. Two patients with acne vulgaris developed numerous new follicular lesions following the application of 1.0% hydrocortisone acetate greaseless cream, but no other reactions occurred in any of the patients which could be attributed to the local application of the steroid. Two patients, treated with oily base number 1, which contains lanolin, developed erythema at the site of application. Patch tests were positive to lanolin on both of these individuals. The major portion of the local reactions noted was due to local irritative phenomena and not primarily to sensitization. Individuals who developed adverse reactions were patch tested with the vehicle minus the steroid, and in these patients the reactions were recorded as mild erythema but no vesiculation.

Comment Hydrocortisone free alcohol and hydrocortisone acetate in concentrations of 0.5%, 1.0%, and 2.5% in oily base ointments, greaseless base creams, or lotions have proved to be of

Conditions Not Benefited (Chart 6)

Condition	Number of patients
Psoriasis	6
Lichen planus	4
Chronic discoid lupus erythematosus	7
Morphea	2
Keratosis Follicularis	2
Epidermophytosis	5
Pustular bacterid	7
Alopecia areata	5
Herpes Simplex	5
Verruca vulgaris	4

great value in producing temporary remission of the symptoms of atopic dermatitis, neurodermatitis, allegic contact dermatitis, stasis dermatitis, pruritus ani, and pruritus vulvae. In most instances continued applications have been necessary to maintain the dramatic relief afforded by these compounds. When the eruption or symptoms have completely subsided, it is possible in the majority of patients to reduce the frequency of the applications to once daily or once every other day. Gratifying results were obtained in the treatment of contact dermatitis of the hands in housewives. The majority of these women have been able to resume normal household duties after the eruption has cleared by applying the preparations once or twice daily in order to retain a satisfactory result. Individuals with pruritus ani or pruritus vulvae may obtain lasting relief after the acute symptoms subside by making application of the hydrocortisone ointment, cream or lotion to the affected areas once daily or every other day. There is no appreciable difference between the local action of hydrocortisone free alcohol and hydrocortisone acetate.

The 0.5% preparations may prove to be of value in the relief of symptoms when used in the initiation of therapy; however, they have definitely proved to be effective in maintaining relief in a large number of cases of atopic dermatitis when the treatment was initiated with the 1.0% or 2.5% compounds.

In a previous report dealing with a small series of patients we suggested that a concentration of less than 1% of the steroid was found to be relatively ineffective; however, the preparations used in that investigation were dispensed in greaseless bases or lotion bases. In this study, dealing with a larger series of patients, preparations containing 0.5% hydrocortisone free alcohol and hydrocortisone acetate in oily bases proved to be effective in 60% of the individuals treated.

In a previous publication we stated that it was frequently possible to discontinue systemic steroid therapy by substituting local applications of hydrocortisone acetate or hydrocortisone free alcohol in a suitable base; this has continued to be our experience. The cost of such local medication is not prohibitive if the patient is instructed to apply only a thin coating.

In our earlier publications we stated that it was impossible to make a dogmatic statement as to the therapeutic advantage one base might have over another. In this larger series it has become obvious that the oily base preparations are much less irritating, and a smaller quantity will cover a larger surface area than a comparable amount of a greaseless base cream. Experience has also indicated that the simple oily bases are the most efficacious and are less irritating.

The inclusion of antibiotics in preparations of hydrocortisone acetate and

hydrocortisone free alcohol has not altered the therapeutic efficacy of the steroid, and the presence of the steroid has not inhibited the action of the antibiotic. The addition of tetracycline, oxytetracycline, neomycin, bacitracin, and erythromycin to these preparations has the additional advantage of eradicating secondary pyogenic infection while the steroid acts on the underlying dermatitis. The results observed in some instances suggests the possibility of a synergistic effect between the broad spectrum antibiotic and the steroid when used in combination.

Conclusions

1. Sixteen hundred fifty five patients with various dermatoses were treated with hydrocortisone free alcohol, hydrocortisone acetate, and combinations of hydrocortisone with various antibiotics incorporated in a variety of vehicles for local application. Twenty three different preparations containing the steroid in concentrations of 0.5%, 1.0%, and 2.5% in lotion bases, greaseless bases, and oily bases were included in this study.

2. A concentration of 0.5% hydrocortisone, or hydrocortisone acetate in lotion, or oily base, was found to be of value in the treatment of 60% of responsive dermatoses. This concentration was also found to be effective in maintaining symptomatic relief when treatment was initiated with a higher concentration. There is no appreciable difference between the action of hydrocortisone free alcohol and hydrocortisone acetate.

3. Of the four lotion bases used, preparations Nos. 1 and 4 proved to be the most effective and the least irritating. A concentration of 0.5% hydrocortisone proved to be effective in the treatment of 60% of patients with atopic dermatitis. The 1.0% preparation was of value in the management of 80% and the 2.5% lotion was of value in 90% of the patients treated. Involution of the lesions and relief of symptoms was temporary in all instances and relapses occurred when the applications were discontinued. It was possible to maintain relief after the lesions had disappeared by reducing the concentration of hydrocortisone or the frequency of applications to once daily or once every other day.

4. The 1.0% and the 2.5% lotions proved to be of great value in the treatment of dermatitis venenata and in most instances obviate the necessity for systemic steroid therapy.

5. Pruritus ani and pruritus vulvae responded readily to the local applications of the hydrocortisone and hydrocortisone acetate but symptoms recurred when medication was discontinued, however it was possible to maintain relief in the majority of instances by applying the preparation once daily, or every other day.

6. Stasis dermatitis responds temporarily to the local applications but relapses occur when they are discontinued.

7. The oily base ointments proved to be superior to greaseless base creams for dispensing the steroid because they were less irri-

tating and also beause a smaller quantity of oily base covers a larger surface area.

8. The addition of antibiotics to ointments or creams containing hydrocortisone free alcohol or hydrocortisone acetate did not alter the effect of the steroid, and had the additional therapeutic advantage of combatting secondary pyogenic infection.

9. No serious cutaneous reactions were observed. No adverse reactions were noted which could be attributed to the hydrocortisone, or hydrocortisone acetate. Local irritations were noted in 81 individuals and in each instance was due to the medium in which the active ingredient was dispensed. Two patients with such reactions were proved to be sensitive to lanolin by patch tests. This was one of the ingredients of the base used in the treatment, and presumably causative of the adverse effect.

10. Hydrocortisone, and hydrocortisone acetate in all concentrations used proved to be of no value in the treatment of acne vulgaris, psoriasis, lichen planus, chronic discoid lupus erythematosus, morphea, keratosis follicularis, epidermophytosis, pustular bacterid, alopecia areata, herpes simplex, and verruca vulgaris.

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Clini-Clipping

Milk seeping from engorged breast, so-called "witch's milk," due to presence of maternal hormone transferred via the placenta. (after Anderson)

External Solutions

A NEW ANTISEPTIC POWDER FOR THERAPEUTIC EXTERNAL SOLUTIONS

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In recent years there has been a tendency to overlook or replace external solutions with antihistamines, antibiotics and the hormone preparations. The indications have not always warranted these types of therapy, therefore the final results were poor. Not only were the diseases, particularly the dermatoses, not helped but in many cases were made far worse due to sensitizations and severe side reactions. This in no way reflects on the beneficial and life-saving properties which these drugs have shown in selected cases. There is no question that a great number of the dermatoses are self-limited, and only await a sound therapeutic principle to hasten their recovery.

These solutions, although used extensively in dermatology, are also indicated in many of the other specialties as well.

External solutions, always aqueous, have found wide usage as wet dressings, soaks, lavages, baths, and douches. The wet dressing is the most frequently used and the most important. Wet dressings prepared with the properly selected drug, in the correct concentration, application and duration, serve not only as adjuvants for further medication and treatment, but are often curative in their own right.

While wet dressing may be used in any stage of a dermatosis, they are particularly indicated in the acute stage.[1, 2] Here one finds vesiculation, erythema, pruritus, pain, exudation, burning and often secondary infection. The first premise, in accordance with fundamental principles in the treatment of any inflammation, is to place the part at rest and apply soothing, non-irritating wet dressings. The patient should remain quiet, or in bed when the eruption is extensive, thus avoiding irritation incident to movement and contact with clothing, while facilitating local treatment.

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The more pronounced the inflammation, the greater the indication for aqueous solutions applied as compresses. Lotions, emulsions, ointments and pastes are contraindicated in the acute stage of all dermatoses as they have a tendency to block secretions, form crusts, inhibit evaporation and are conducive to secondary infection.

Action of Aqueous Solutions

I. Physical Action

1. Antipruritic and analgesic—by when solutions used are cool or cold.
2. Thermo-cutaneous regulation—retains heat as in furuncles, carbuncles—when solutions are warm or hot.
3. Emollient or soothing.
4. Detergent or cleansing.
5. Maintains drainage of infected areas—pustular conditions.

II. Chemical Action

1. Antipruritic and analgesic—by evaporation cools the skin.
2. Antiseptic
3. Astringent
4. Buffer—approximates normal acidity of the skin.
5. Digestive—by acting on the released enzymes in the skin by dissolution.
6. Keratolytic—by removing abnormal thickening of the skin by maceration.
7. Alteration of blood flow
   (a) vasodilatation
   (b) constriction

Wet dressings of the open type are those in most common use rather than occlusive as the latter prevents evaporation. The dressings can be made from discarded soft cotton pieces of unstarched sheeting, white shirting, pillow cases, napkins or handkerchiefs. The material should be clean, folded six or eight times and wide enough to slightly overlap the area to be treated. Never use absorbent cotton or gauze for this purpose as these have to be discarded after use and are therefore expensive and inefficient as well. Cotton adheres to the skin, packs down and prevents evaporation. Gauze is wide-meshed, does not hold the solution well, may irritate because it is coarse and tends to have stray threads which may get into open lesions.

The dressings should be kept wet at all times. This is of the greatest importance. Use liberal amounts of solution and cloth and repeat the application of the solution as often as necessary to keep the cloth well saturated. Allowing it to dry ends the effectiveness of the dressing and may cause it to adhere, particularly if an exudate is present.

There are two general methods of application.

(a) Pouring the solution over the wet dressings—where the dressing covers an extensive area and the patient is bedridden, the bedding must be protected by the use of a rubber sheet. This method demands constant attention.

(b) Applying a wet dressing to the area—this is the preferred method and is performed by immersing the dressing into the solution, and applying it to the area. A fresh dressing must be used each time it is immersed when infected areas are being treated.

The use of numerous drugs and

preparations for external solutions has been advocated for many years. Table 1 enumerates the various products in common use today with their qualifications. These preparations have not proven entirely satisfactory nor have they met with uniform success because of certain deficiencies. There has been a need for a universal preparation to meet all the indications for an external solution.

Aluminum acetate solution U.S.P. (Burow's Solution) is the most efficacious of all those enumerated. However it has several inadequacies: instability (even official solutions slowly precipitate basic aluminum salts with a subsequent loss of strength), only partial bacterial inhibitory action.[2, 3, 4, 5, 6] poor deodorizing properties and are difficult to prepare.

Various attempts have been made to develop a soluble powder that would instantly prepare a satisfactory, official aluminum acetate solution. To date, probably the most satisfactory, from a therapeutic standpoint, was developed in Germany and called "Essigsauretonerde." It was introduced in this country under the trade name of Buro-Sol[8] Powder (Doak). While not official, it was declared by Sulzberger[7] to have more certain and regular effects than the official solution in use at that time (1940). Later efforts included dried aluminum subacetate powder to which

TABLE 1

Qualifications of Some Commonly Used Aqueous Solutions

SOLUTIONS / QUALIFICATIONS	Antiseptic	Astringent	Antiphlogistic	Antipruritic	Non-toxic	Stable	Deodorant	Non-irritating	Non-caustic	Non-staining	pH near that of skin
Boric Acid			X						X	X	X
Burow's Solution	O	X	X	X	X			X	X	X	X
Chlorophyl and Fatty Acids	O			X	X	X	X	X	X	X	
Colloidal Oatmeal				X	X			X	X	X	
Colloidal Oatmeal Aluminum Sulfate & Calcium Acetate		O	O	X	X			X	X	X	X
Aluminum Sulfate & Calcium Acetate		X	X	X	X			X	X	X	X
Bichlorides	X					X	X				
Magnesium Sulfate (Epsom Salts)		X	X		X				X	X	
Potassium Permanganate		X					X		X		
Vleminckx's Solution	X	X			O						
Salt Solutions			X		X	X			X	X	

Key: X—meets qualifications. O—partially fulfilled qualifications.

TABLE 2

Analyses of Aluminum Acetate Content of Available Preparations

PRODUCT	RECOMMENDED DILUTION	*DILUTION OF UNFILTERED SOLUTION	*DILUTION OF FILTERED SOLUTION	*DILUTION OF FILTERED SOL. HEATED AT 45° FOR 15 MIN.	APPEARANCE OF FILTERED SOL. HEATED AT 45° FOR 5 DAYS
BUROW'S SOLUTION U.S.P.	1:10	1:10.2	No change	No change	Slight Precipitate
BURO-SOL† ANTISEPTIC POWDER	1:10	1:10	No change	No change	Clear
POWDER A	a	1:26.5	1:31.5	1:66.3	b
TABLET B	1:10	c	1:10.0	1:15.8	Precipitate
TABLET C	a	1:31.7	1:55.2	1:96.4	b
POWDER D	1:20	1:24.2	1:63.1	b	b

Note: All preparations were diluted according to manufacturer's directions—Burow's Solution U.S.P. should contain 5.4 Gms. ± 7½% of aluminum acetate ($C_6H_9AlO_6$).

† Preparation described by authors in this article.

* Based upon actual aluminum acetate analyses.

a Manufacturer does not state concentration of prepared solution.

b These tests not performed.

c Manufacturer directs solution to be filtered.

glacial acetic acid was added. This was only partially successful due to fluctuating solubility and inherent instability of the powder in solution.

More recent dry mixtures to prepare aluminum acetate solution contain calcium acetate and aluminum sulfate. When added to water they interact to form an aluminum acetate solution in addition to a precipitate of calcium sulfate (Plaster of Paris).

In all of the preparations, both liquid and dry, it is essential to filter the final solution, as only the soluble aluminum acetate is effective. The United States Pharmacopeia has taken cognizance of this fact, as well as the precipitation factor by cautioning that only the clear supernatant fluid is to be dispensed.[5]

Our attention was called recently to a new product* that appeared to offset the deficiencies of the aluminum acetate solution U.S.P. and the dry-mix preparations. This preparation consisted of a powder which, when dissolved in a specific amount of water, immediately produced a clear aluminum acetate solution U.S.P. This solution required no filtering, was clear, and stable three months after preparation and maintained the original pH.

Table 2 gives a comparison of the aluminum acetate content of available preparations, tablets, powder and dry-mix products. Tablet B makes a dilute official aluminum acetate solution, but requires filtration in order to remove the calcium sulfate precipitate, an impractical procedure from the patient's standpoint. Powder A and Tablet C, different forms of the same product, do not indicate the strength of the prepared solution, do not make official solution even when filtered and since there is a

* Buro-Sol Antiseptic Powder "Doak", Doak Pharmacal Co., Inc., New York, N. Y.

TABLE 3

Bactericidal Activity of Benzethonium Chloride (N.N.R.)

Organism	Dilution of Benzethonium Chloride Bactericidal in 10 Minutes at 20° C.
Escherichia coli	1:20,000
Micrococcus pyogenes var. aureus	1:25,000
Shigella sonnei	1:30,000
Streptococcus pyogenes (C203)	1:30,000
Brucella abortus	1:40,000
Corynebacterium diphtheriae	1:45,000
Listerella monocytogenes	1:60,000
Diplococcus pneumoniae	1:80,000

difference in the aluminum acetate content between the unfiltered and the filtered solutions, it is apparent that not all of the aluminum acetate is available in solution. Powder D, which is a mixture of colloidal oatmeal aluminum sulfate and calcium acetate, has a smaller soluble aluminum acetate content than those mentioned above.

In order to further enhance the new preparation discussed in this paper, there has been added a water soluble antiseptic and deodorant, di-isobutyl phenoxy ethoxy ethyl dimethyl benzyl ammonium chloride, monohydrate. It is a pure quarternary ammonium salt designated as benzethonium chloride N.N.R. and having the following structural formula:

This compound is one of the newer effective antiseptics which has proven to be non-toxic.[9] Sensitization tests on the cornea and oral mucous membrane of animals have not produced any irritations in concentrations of 1:500 and 1:1000 respectively.[7] Concentrations as high as 3% have been applied to the human skin continuously for 48 hours without causing iritations.[10]

Being a surface active antiseptic it will destroy organisms which are embedded in skin films containing oils or exudates. It is a true deodorant, not masking one odor with another but rather by destroying the odor while remaining odorless itself.

Table 3 shows the bactericidal activity of benzethonium chloride N.N.R. on various organisms. Several of these organisms are the causative factors in some common pathologic conditions while the others are shown to indicate the effectiveness of the antiseptic.

Table 4

Bactericidal and Bacteriostatic Activity of Powder Studied in this Paper

Organism	Dilution of Benzethonium Chloride in Solution with Aluminum Acetate	
	Bactericidal	Bacteriostatic
Micrococcus pyogenes var. aureus	1:5,000	1:240,000

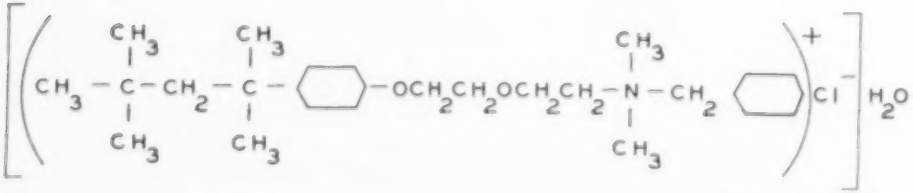

Fig. 1. Positive zone of inhibition of Buro-Sol antiseptic powder on **Micrococcus pyogenes** var. **aureus.**

It was essential to establish the compatibility of the antiseptic, benzethonium chloride N.N.R. with aluminum acetate solution U.S.P. Table 4 demonstrates the bactericidal and bacteriostatic activity of the new powder described herein against the standard organism prescribed by the F.D.A. for testing antiseptics, namely *Micrococcus pyogenes* var. *aureus*. Figure 1 shows the zone of inhibition of the mixture against this same organism. Although the acidity of the aluminum acetate solution decreases the activity of the antiseptic, it is still sufficiently powerful to be bactericidal as well as bacteriostatic in the dilutions used.

Packets of this new powder containing 2.36 gms of a mixture of aluminum acetate and benzethonium chloride were dissolved in a pint of water producing a 1:15 clear Burow's Solution U.S.P., and a 1:5000 dilution of benzethonium chloride N.N.R. All tests in this paper were made with this dilution as recommended by the manufacturer.

Burow's Solution has some inhibitory action against certain bacteria, particularly the gram negative group.[3,4,8,11,12] Combes has stated, "It (Burow's Solution) tends to maintain an actual acidity unfavorable to bacterial proliferation."[8] Thus one readily can see that this Buro-Sol® Antiseptic Powder has a wide effective range in both gram positive and gram negative organisms, and would apply to various conditions seen in all fields of medicine and surgery.

A primary consideration in the use of a preparation locally is that it not sensitize, irritate, injure, or aggravate

TABLE 5

Traub-Spoor Patch & Use Test on 100 Subjects with Various Dermatoses

Test Material	No.	Dermatoses	Initial patch % positive	Reactions after 2 weeks use	Challenge patch % positive
1 Packet dissolved	63	Contact	0	1 mild erythema	0
1 pint H_2O (1:15	18	Dermatophytosis	0	—	0
aluminum acetate solu-	7	Seborrheic dermat.	0	—	0
tion U.S.P. plus	8	Nummular eczema	0	1 mild erythema	0
1:5,000 benzethonium chloride N.N.R.)	4	Stasis eczema	0	—	0

the existing disease nor the normal surrounding area.

A group of 100 patients with various dermatoses were tested with this solution by the Traub-Spoor Method of combined Prophetic Patch and Use Test.[13] As aluminum acetate solution U.S.P. and benzethonium chloride N.N.R. individually are well known to have a low sensitivity index, this number was deemed sufficient for test purposes.

Patients were selected for testing who had various dermatoses in which this preparation is indicated. Table 5 shows the results of these tests. There was a slight modification of the test in that the Use Test was reduced to two weeks, as generally a wet dressing would be discontinued after this period. Actually,

TABLE 6

Tabulation of Dermatoses

Method of Treatment and Number of Cases

Type of Therapy	Dermatoses	Number	Total
Wet Dressings	Acrodermatitis pustulosa repens	4	
	Cellulitis	5	
	Chancroid	3	
	Contact dermatitis	123	
	Diaper dermatitis	4	
	External otitis	6	
	Herpes zoster	3	
	Infectious eczematoid dermatitis	30	
	Kerion celsi	2	
	Lichen urticatus	17	
	Miliaria	6	
	Poison ivy, oak and sumac	15	
	Seborrheic dermatitis	26	
	Stasis eczema	20	
	Sycosis vulgaris	2	
	Varicose ulcers	18	284
Soaks	Bromidrosis	3	
	Dermatophytosis	66	
	Nummular eczema	34	
	Pompholyx and dyshidrosis	9	112
Baths	Atopic and neurodermatitis	42	
	Contact dermatitis	42	
	Dermatitis herpetiformis	2	
	Erythema multiforme	4	
	Mycosis fungoides	2	
	Pemphigus vulgaris and vegetans	3	67
Sitz Bath	Pruritus ani et vulvae	10	10
Douches	Monilial vaginitis	7	
	Trichomonas vaginitis	4	11
Mouth Wash	Apthous stomatitis	7	
	Contact dermatitis from dentures	2	
	Oral pemphigus vulgaris	4	13
	GRAND TOTAL		497

TABLE 7

Postular Dermatoses Treated with Results

Diagnosis	Number of Patients	Average Days for Curing of Secondary Infection		Not Improved
		Burow's Sol. U.S.P.	New Preparation	
Acrodermatitis pustulosa repens	2	8	5	1
Contact derm.	14	7	4	1
Dermatophytosis	12	15	10	0
External otitis (bacterial)	3	12	3	0
Infectious eczematoid dermatitis	7	6	4	1
Nummular eczema	12	16	14	4
Pompholyx	3	13	8	0
Stasis eczema	7	8	6	2
Varicose ulcers	4	9	5	1
TOTAL	64	94	59	10
Average days		10.4	6.5	

many of the patients undergoing the test continued their treatment with the solution long after there was a need for this type of medication.

The above-mentioned table corroborates the low incidence of sensitivity. The authors are cognizant of the statistical factors involved in limited tests of this nature, and the dangers of drawing general conclusions therefrom. However the results agree with many years of observation and trial of the *individual* ingredients found in the new product which have not resulted in sensitivities or irritations.

Table 6 shows the dermatoses and number treated to date. All of these cases were chosen because of secondary pyoderma being either present or potential. In view of the fact that all of these conditions frequently develop a secondary pyoderma, they were treated in order to abort this complication. As has been previously stated, aqueous solutions are used initially in any acute dermatoses to reduce edema and inflammation and preparatory to further curative medication if indicated.

In order to prove whether or not the preparations under consideration had antiseptic merit, patients were selected who had similar bilateral pustular dermatoses for comparison. Burow's Solution U.S.P. was used on one side and the preparation under consideration on the other. We selected 64 patients. The results of treatment are tabulated in Table 7. It can readily be seen that there was definite improvement in a shorter period of time with the new preparation under consideration. Those who did not respond or were not improved were known to be recalcitrant to most of the other medications. Although a few patients experienced some burning, this is justifiable as even water

irritates an inflamed skin. Whereas it took a total average of 10.4 days for Burow's Solution to relieve the pustular condition, only 6.5 days were needed for the new powder tested.

A few of the dermatoses treated will be briefly discussed.

Contact Dermatitis A large number of the patients had housewives eczema of the hands. These usually are secondarily infected due to scratching. There were a number of other patients with industrial dermatitis of the hands and face. Wet dressings here were very soothing and gave a great deal of relief. Poison ivy dermatitis has been included in this group.

External Otitis This condition is usually of bacterial origin, and this has been demonstrated in from 45% to 94% of patients.[14, 15, 16] The results with applications of the solution as wet compresses or on cotton wicks have been extremely useful. Cultures were done and *Pseudomonas aeruginosa* was found in five of the six patients. It is known that acetic acid is a specific for these bacteria.

Infectious Eczematoid Dermatitis The first premise is to treat the focus and then the secondary infection. In addition to the wet dressings, internal antibiotics may have to be used if sensitivity tests are done to determine which bacteria are vulnerable.

Miliaria As these studies were done during the hot weather, an excellent opportunity was afforded to study the action of this solution. Relief of the pruritus and discomfort was obtained in a short period of time.

Seborrheic Dermatitis As this dermatosis involved not only the scalp but usually the intertrigenous areas with secondary infection, cool compresses gave relief from the pruritus, infection, and exudation. As soon as the areas became dry other preparations were instituted.

Varicose Ulcers This is a chronic condition and is due to venous insufficiency with incompetency of the venous valves and a stasis of the return blood. Usually they become secondarily infected and inflammation of the surrounding skin occurs. Before any corrective measures are taken the ulcer must be treated in order to produce healthy non-infected granulation tissue. Wet compresses with this solution were very effective applied for 15 minutes to one-half hour three to four times per day.

Bromidrosis This condition as a rule is usually accompanied by hyperhidrosis. The present preparation appeared to be every effective, combining the astringent actions of aluminum acetate and the deodorant qualities of the antiseptic benzethonium chloride.

Dermatophytosis This condition is among the most common of the dermatoses and is particularly prevalent in the summer, although in the winter it occurs in those with marked hyperhidrosis of the feet. Secondary infection is very common and the pruritus at times is intense. Accompanying these is usually a malodorous complication due to bacterial invasion. The preparation used proved most effective in overcoming all of these complications.

Baths These are very essential in many of the dermatoses, especially in those which are generalized and pustular. This preparation was used with marked success undoubtedly due to its astringent, antiseptic, soothing and deodorant effects in diseases such as contact dermatitis, erythema multiforme

bullosum, dermatitis herpetiformis, pemphigus, and neurodermatitis. There appeared to be an added advantage in using a preparation that fulfilled these essential requirements.

Sitz Baths These are useful in pruritus ani et vulvae where there is usually secondary infection and inflammation. Four packets to four gallons of water were adequate. Patients used the solutions for 15 minutes three to four times per day with gratifying relief.

Monilial and Trichomonas Vaginitis Trichomonas vaginitis is often seen by the dermatologist as a secondary infectious eczematoid dermatitis, and occurs due to the profuse, irritating discharge. In both of the above conditions pruritus is intense. It is recognized that acid douches are desirable in these conditions to restore the normal vaginal acidity. Two packets in 2 quarts of water were used. The buffered acidity (pH 4.5) of the solutions made from the powder under consideration undoubtedly aided in the symptomatic relief of this condition. Trichomonacides and fungicides were used in addition to the acid douches.

Mouth Washes One packet dissolved in a quart of water served as an efficient mouth wash that was effective in controlling apthous stomatitis, contact dermatitis from dentures and oral pemphigus vulgaris. The unused solution need not be refrigerated but should be stored in a covered non-metallic container.

Summary and Conclusions

The aqueous solutions have a definite place and are of distinct therapeutic value in the treatment of many medical conditions, particularly in dermatology. They cannot be replaced by any of the newer antibiotics or hormones, but act as an adjuvant to these.

The present available preparations for aqueous solutions, their indications and merits are outlined.

Burow's Solution, one of the most popular and effective of wet solutions, is discussed and its inadequacies outlined.

A new powder is introduced which when dissolved in water prepares immediately a clear, stable dilute aluminum acetate solution U.S.P. plus an effective antiseptic, benzethonium chloride N.N.R. The advantages of this solution and its superiority over ordinary Burow's Solution is discussed.

Sensitivity tests of this solution on 100 patients proved it to be of negligible significance in sensitivity or irritating reactions.

Various forms of treatments and diseases are discussed in treating 497 patients with good results.

In the treatment of 64 patients with similar bilateral pustular dermatoses it was found that the length of time for cure of the infection for Burow's Solution was 10.4 days and with the Buro-Sol Antiseptic solution only 6.5 days.

From our studies this preparation warrants its use over other aqueous solutions in those diseases where an astringent, antiseptic deodorant and antipruritic is indicated.

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"MEDICAL TEASERS"

A challenging crossword puzzle
for the physician
page 43a

Allergic Syndromes

THE RECOGNITION AND TREATMENT OF CERTAIN FOOD-INDUCED ALLERGIC SYNDROMES

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It is common knowledge that hives, angioneurotic edema, asthma and gastro-intestinal symptoms may occur in susceptible individuals who eat certain allergenic foods. However, many physicians are unaware that the ingestion of allergenic foods may cause exhausting physical fatigue, bodily pain (especially in muscle and joints), and mental symptoms. Patients with such syndromes may or may not have a family or personal history of recognized allergic illness. Such persons are often considered to be chronic complainers by their families, and to be psychoneurotic or constitutionally inadequate by the physician.[1]

Identification of the allergenic food or foods may be made by using appropriate methods. Complete elimination of the offending food from the patient's diet gives him freedom from his illness. The physician confronted by a patient complaining of fatigue, pain or mental symptoms should consider food allergy as a possible cause of these symptoms in his differential diagnosis.

In certain susceptible persons, the ingestion of a threshold amount of an allergenic food causes one or more of the following syndromes (with or without accompanying hives, asthma or other recognized allergic reactions):[2]

a. Allergic Fatigue Syndrome

There is mild, moderate or severe somatic muscle fatigue of variable duration, lasting from a few hours to several days, depending on the amount and frequency of ingestion of the offending food. If the food is eaten daily, the patient may have a steady state of fatigue. The fatigue is often associated with cervical lymphadenopathy, more rarely generalized lymphadenopathy, lymphocytosis (with cells suggestive of infectious mononucleosis), and hypothermia (rarely, hyperthermia). Muscles are often hypotonic to palpation. Rest does not seem to alleviate the fatigue, and physical exercise of ordinary daily activities seems to increase the fatigue.

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b. Allergic Pain Syndrome There is mild, moderate or severe generalized pain in somatic muscle, tendon, periosteum and periarticular tissues, both spontaneously and upon external digital palpation. The pain may occur intermittently or persistently, depending on the amount and frequency of ingestion of the offending food material. Persons with this syndrome tend to avoid physical exercise because this increases their discomfort. When an allergenic food is ingested by a person with this syndrome, even slight mechanical injury of joints sustained in the performance of usual physical activities may cause markedly increased pain and prolonged local joint swelling, redness, heat, increased venous engorgement, and limitation in the range of joint movement. Psychogenically induced, sustained hypertonia of somatic muscle intensifies the allergenic pain syndrome.

c. Allergic Mental Syndrome Mental symptoms may be slight, moderate or severe, and may be variable or persistent, depending on the amount and frequency of ingestion of the offending food. The symptoms include mental fatigue, depression, confusion, mental sluggishness, fogginess, haziness, a feeling of being partially anesthetized, "toxic" feelings. The patient may be unduly irritable, unreasonable, restless; he may have temper tantrums, memory loss, inability to concentrate, sleepiness, and, rarely, insomnia. His mental inertia may be so severe that he finds it difficult to make decisions about even unimportant and uncomplicated matters. He may require long naps in the afternoon. The patient may know that "something is wrong" with him, but may prefer to complain vaguely that he does not feel well because he is afraid the physician will think him "insane."

The allergic syndromes described above can be identified when the offending food or foods are removed from the patient's diet for two or three weeks, and the patient's illness disappears. With the reintroduction of the allergenic food into the patient's diet (before clinically significant hyposensitization has occurred upon the elimination of the food from the diet), there is recurrence of the original symptoms.

The patient's allergic state is dynamic, and influenced by a variety of factors. The intensity of the patient's reaction to a given allergenic food depends on such factors as his emotional state, the degree of tolerance he has for this food, the frequency of ingestion, the amounts ingested, the degree of sodium retention (such as occurs in women premenstrually), the presence or absence of concomitant factors such as inhalant allergies, hot or cold environmental temperatures, and, more rarely, the presence or absence of contactant allergies.

Food allergies may be fixed or variable; they may be mild, moderate or severe in intensity; of brief, moderate or long duration. In the fixed type of food sensitization, elimination of the offending food for long periods of time from the patient's diet does not appreciably increase his tolerance for this food. In the variable type, prolonged elimination of the offending food improves tolerance in various degrees. When tolerance has been acquired so that a single ingestion of an ordinary serving of the allergenic food causes no symptoms, such tolerance can be decreased subsequently by too fre-

quent or immoderate ingestion of the allergenic food. Sometimes clinical hyposensitization can be acquired rapidly (in several weeks of abstinence); sometimes it may take many months or even years to acquire.

Usually the daily ingestion of a food to which the patient is allergic tends to cause a steady state of symptoms, so that he is tired all the time, has bodily pain all the time, or has mental symptoms all the time, so that the patient is never free from symptoms, even though there may be minor fluctuations in the severity of his symptoms. If the offending food is not ingested daily, the pattern of clinical symptoms usually tends to follow the ingestion of the offending food by a variable latent period as short as 15 minutes or as long as 72 hours. This pattern may persist for as short a time as 15 minutes or as long a time as several days. It must be noted that if a patient eats an allergenic food daily for four consecutive days or more, and then omits this food for four days and eats it again on the fifth day, he may experience a severe allergic reaction on the fifth day. (This is the basis of the Rinkel feeding test, which is a useful method for exteriorizing clinically significant food allergies.[3, 4, 5]) If a patient reacts to more than one allergenic food, the clinical picture is more complex, since each food contributes to his symptomatology.

Skin tests are of limited value in the identification of clinically significant food allergies, although occasionally they are useful. Careful analysis by a physician of a food-symptom diary kept by the patient is an important method of studying reactions to the ingestion of allergenic foods; by studying such a diary the physician can tentatively identify offending foods. The diary shows how elimination of the suspected food from the diet lessens the severity of symptoms or renders the patient symptom-free, and how reintroduction of the food causes recurrence of symptoms. In the diary the patient should list whatever psychic disturbances he experiences; in this way it is possible for the physician to distinguish between primary psychogenic reactions and primary allergic reactions.

The elimination diets of Rowe[6] or modifications thereof may often be used advantageously for limited periods of time. However, a severely allergic individual may have relief of symptoms initially when he follows a strict elimination diet containing few foods, but soon may begin having symptoms again because he has become sensitized to some food included in the elimination diet.

Some common foods which frequently give rise to the three syndromes described above are: chocolate, citrus fruits, tomato, pineapple, milk, eggs, wheat, corn, nuts, beef, pork and potato. Often the offending foods are the patient's favorite foods, which he has eaten frequently and in large amounts.

Once the offending foods have been identified, they must be excluded from the patient's diet in every possible form. The use of a rotary diet, in which the same food does not recur more often than once every fifth day, is of great benefit to those severely allergic patients who react to many foods. This diet usually requires considerable modification in the conventional pattern of eating.

When a patient has eliminated an allergenic food from his diet for several

months, his tolerance for this food may be tested by having him eat it once a month for several months. If this causes no symptoms, he is advised to have an ordinary serving of the food once every five days. If subsequently he redevelops symptoms following ingestion of this food, he should omit it from his diet for a longer period of time than previously.

Antihistaminics do not lessen the severity of the allergic fatigue, pain and mental syndromes. Concomitant inhalant allergies may have to be treated successfully if the patient is to feel well.

In order to obtain the best therapeutic results, it is essential that the patient cooperate intelligently with the physician. The patient must understand the nature of his allergic illness and the method which the physician is using for study and treatment.

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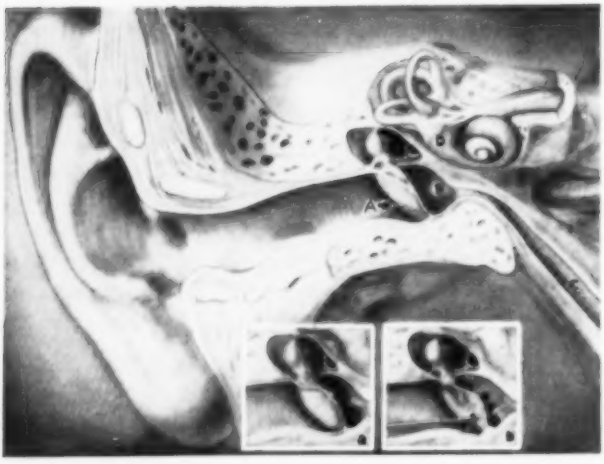

Anatomy of the ear showing relation of tympanic membrane A to the tympanic cavity B, the Eustachian tube C, and the labyrinth D. a—Retraction of the tympanic membrane . . . b—Cutting adhesions.

Staphylococcus Aureus Hemolyticus and Antibiotics

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Recently, in my laboratory we have had an experience with the above germ which we feel should be of interest to the medical profession largely because of the reaction encountered to various antibiotics; information we have had prior to this report was indifferent, and incorrect.

The organism which we have used in our tests was recovered from a persistent type of dermatitis localized to the skin of an adult's first two fingers, occurring in splotches and gradually spreading to the back of the hands. The lesions itched, and at times would become quite irritable, red and edematous, with the occasional occurrence of a small scattered number of white-yellow pustules each about a millimeter in diameter. From the pustules, during a violent stage of the malady, we were enabled to culture *Staphylococcus aureus*, with marked hemolytic action on blood agar.

In an attempt to cure the infection, which was probably secondary to some form of skin allergy to chemicals, we sought information from various sources, as to which ones of the antibiotics would be more effective. From one source we found that penicillin, Aureomycin, Terramycin and chloramphenicol were the ones of choice; and that penicillin was the antibiotic of "first or of equal choice," a fact which we could not confirm; thus we have performed a series of plate tests in order to clarify the problem.

Technically, we used the Petri dish agar plate method, using discs on blood agar of an enriched type. The blood was mixed with the agar while very hot so as to reduce normal antibodies. The discs had been procured from various manufacturers in fresh condition, and we found the test method highly satisfactory. The bacteria were washed from a pure culture, and mixed with sterile distilled water to make a suspension of about 2,000,000,000 bacteria, and one or two drops of that substance was placed in an allotted space upon the agar, followed by a disc dropped centrally into the bacterial mixture. We were, in this manner, assured that the bacterial mass was in complete contact with the disc. The plates were read in 24 and 48 hours.

To date we have tested *10 antibiotics*. The observations disclosed that the antibiotics were effective in the following order: Chloromycetin, Ilotycin, Erythrocin, bacitracin all of which completely destroyed or *prohibited the germs' growth*. Streptomycin was also effective, but was not completely inhibitive. Next we found that there was a moderate inhibition against the staphylococcus, of about equal intensity, when we plated it with *Aureomycin, Achromycin* and *polymycin;* and to our great surprise, penicillin had, as far as we could determine, *NO EFFECT AT ALL.*

There has been a considerable amount of discussion among bacteriologists and physicians about the resistance of the *Staph. hemolyticus* to such curative substances. In fact some physicians believe that in acute blood stream infections, especially where endocarditis or metastatic abscesses have occurred, that the germ is absolutely fatal; and the writer feels very strongly that the facts indicate the truth of the contention. Thus, this bacterium stands high among us as a most formidable one.

The *Staphylococcus aureus*, as we know both the hemolytic and otherwise, causes a myriad of conditions, often secondary to some other process. It can be a producer of abscesses in most all spots of the body, also causes acne, throat, and nasal troubles. Apparently penicillin would be useless in therapy, although it is a fact that some antibiotics are helpful in infections where the sensitivity tests reveal little or no inhibition; on the other hand we know that there is almost uniformly satisfactory results when we administer antibiotics which we have found to have a high degree of bacterial plate sensitivity against the infecting germ. Thus, the proper procedure would be to make the sensitivity tests beforehand, if possible. Such tests protect the patient from unnecessary expense. It would also appear reasonable to believe that in combatting the *Staph. aureus hemolyticus*, we could enhance our therapy by combining two or three antibiotics for continued use. Such a plan would be feasible in attacking an acute staphylococcal endocarditis, with the hope that the germ could be destroyed before serious damage had occurred to the valves.

As a matter of fact Jones and Yow have published a recent report in *Antibiotics Annual*, 1953-54, in which they

Chart illustrating Tests for Sensitivity of the Staphylococcus Hemolyticus Aureus

Penicillin	after 24 hours discs, blood agar:	No inhibition
Chloromycetin	" "	Complete inhibition
Streptomycin	" "	xxx inhibition
Ilotycin	" "	Complete inhibition
Terramycin	" "	xx inhibition
Achromycin	" "	xx inhibition
Polymixin	" "	xx inhibition
Erythrocin	" "	Complete inhibition
Bacitracin	" "	Complete inhibition

Note. Achromycin discs were 10 micrograms; so where Erythrocin, polymixin and bacitracin; streptomycin 0.01 mgms. Penicillin 10 units.

refer to two patients suffering from hemolytic staphylococcic endocarditis with one cure, effected when Erythrocin was used in combination with streptomycin.

In reference to the dermatitis of the fingers and hand, from which the original culture was obtained for experiments in this report, it was observed that Erythrocin taken internally, with an application of Erythrocin ointment applied to the skin lesions, produced a marked regression in the infection, especially the pustular condition which had proved to be so very discomforting.

To summarize, it would seem that a proper approach to combatting infections of a more serious type caused by the *Staphylococcus aureus hemolyticus* would be to direct the therapeutic armamentarium in a three point attack, beginning first with Chloromycetin internally in strong dosage, with either Erythrocin-Ilotycin alternating, and streptomycin administered intramuscularily. Treatment to be continued according to the clinical and bacteriologic indications. Such a plan should be curative.

138 Doctors Building

AN EXERCISE IN DIAGNOSIS — THE CASE REPORTS

IN addition to our regular quota of original articles, "Refresher" articles and departments, this issue, and every issue, contains selected Case Reports from the Clinico-Pathological Conferences at New York University-Bellevue Medical Center. You will find them on pages 307-316. We recommend these studies as interesting and stimulating.

Hemochromatosis

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Recent studies of iron and pigment metabolism [4, 7, 16, 19, 20, 28, 36, 46, 47, 48] have added to our understanding of hemochromatosis, a disease of unknown etiology in which body iron stores are markedly increased. The concept of "mucosal block" as a regulator of iron absorption and storage leads to discussion of the factors involved in normal and abnormal iron pigment metabolism.

Pigments Hemosiderin, hemofuscin, and melanin are the pigments present in hemochromatosis.

1. **Hemosiderin** contains clusters of ferric hydroxide polymers in the form of granules that stain for iron and are microscopically visible. The formation of hemosiderin is an abnormal stage of iron deposition deviating only slightly from ferritin. Ferric hydroxide micelles attached to ferritin instead of consisting of small polymers grow abnormally large.

2. **Hemofuscin** is a pigment which does not give a reaction for iron that accompanies hemosiderin. It may vary in color from gray to yellow to brown and occurs in smaller grains. It is very poorly characterized and may represent several different substances produced in the same or different cells as a result of abnormal cell metabolism.

3. **Melanin** and hemosiderin are the pigments responsible for the change in skin color. Hemosiderin produces a bluish black or lead color in the skin. Melanin causes a brownish color of the skin and by modifying the slate gray of the hemosiderin produces the classical bronzed appearance.

Summary of Newer Concepts of Iron Metabolism

The iron compounds of the body are divided into two groups:

1. Iron porphyrin or heme compounds.

2. Non-heme iron compounds, proteins containing iron not chelated in a porphyrin ring.

The heme compounds are the means of providing oxygen to the body cells. The principal compounds are hemoglobin and myoglobin which represent 65 to 75 per cent of the total body iron.

The non-heme compounds are made up of two classes:

1. Ferrous iron and siderophylin (transferritin), a serum globulin, which is the transport form of iron in the blood stream, carrying two iron atoms in the ferric state.

2. Iron in the form of ferric hydroxide units, ferritin and hemosiderin, are the storage forms of iron. *Ferritin* is a brown iron-containing protein, not microscopically visible, and not readily

From the Journal Club Conference, New York University—Bellevue Medical Center, Post Graduate Medical School, New York, N. Y.

detected by iron stains. The iron of ferritin is in the form of ferric hydroxide micelles or clusters with the average composition containing about 1 PO_4 for every 9 iron atoms [$(FeOOH)_8$. $(FeOPO_3H_2)$].

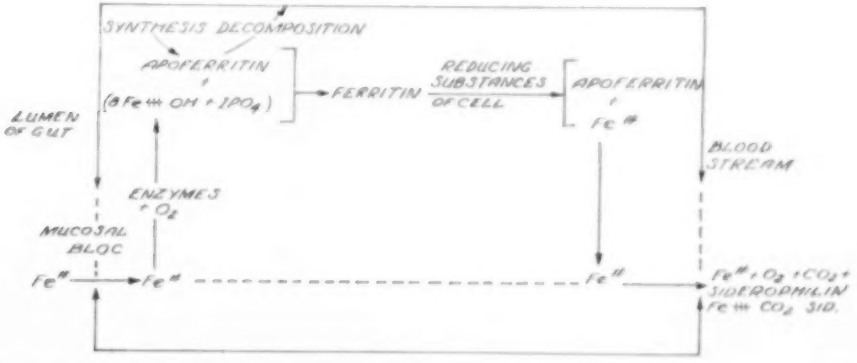
Two of ferritin's functions are concerned with iron metabolism. Its primary function is that of a normal iron storage protein of the body. Many different tissues of the body appear to be able to make ferritin which can be isolated from liver, spleen, and bone marrow and in lesser amounts from testicles, ovary, kidney, and pancreas. It is likely that ferritin represents most of the available iron stores in man.

Ferritin also appears to function in some way that is not clear in the regulation of iron absorption. The mucosal cells of the gastrointestinal tract control the amount of iron absorbed. The formation of ferritin in these mucosal cells is in some way connected with the production of a block in the mucosa preventing excessive absorption of iron.

Iron Absorption Regulation Iron must be present as ferrous ions to be absorbed. Iron absorption may take place all along the gastrointestinal tract but primarily the region of most active absorption is in the duodenal region just below the pyloric sphincter. The regulating mechanism for iron is at the port of entry. Since iron once absorbed cannot leave the body, a mechanism for iron regulation must exist to prevent excessive amounts of iron from being absorbed over the years but at the same time to permit adequate amounts of iron to be absorbed. The controlling device appears to be the mucosal cells of the gastrointestinal tract. Mucosal cells normally permit a small relatively constant amount of iron to be absorbed daily. Of 20 mg. of iron ingested in food per day in the normal diet only 2 mg. or less are absorbed. In anemia of iron deficiency 2-10 x more iron is absorbed than normally. Whether the heightened absorption is due to diminution in the oxygen getting into the mucosal cells or due to a more indirect effect of lessened oxygen tension or a hormonal mechanism can only be conjectured at the present time.

A schematic representation of iron absorption by the mucosal cell is as shown below.

From Granick.[20] Hypothesis of the regulation of iron absorption by the mucosal cell.



The protein, apoferritin, is formed in the intestinal mucosal cell and combines with ferrous iron from the intestine to form ferritin, releasing the iron to the blood only when the body needs it. The iron in the blood combines with the blood protein, siderophylin, which carries it to the tissues. Release of the iron to the blood converts the mucosal ferritin to apoferritin which then breaks down, being resynthesized when further passage of iron into the cell occurs. Body iron stores apparently determine when ferritin will release its iron to the blood. Thus, if body iron stores are adequate, apoferritin in the intestinal mucosa becomes saturated with iron, blocking further absorption of iron from the intestine.

In hemochromatosis the excessive accumulation is probably due to a defect in the mucosal cells which leads them to absorb more than the usual amount of iron. This absorption may be only somewhat greater than normal but over a period of many years the iron accumulates in the body.

Hemosiderosis versus Hemochromatosis[20,47,61]

Hemochromatosis is distinct from hemosiderosis in which iron pigments resulting from the excessive destruction of erythrocytes are deposited in tissues. In hemosiderosis there is evidence that such iron pigments are used again in the formation of blood whereas in hemochromatosis the hemosiderin is not used again. In hemosiderosis a particular tissue or the entire body contains more iron than is normally found. It does not in any way imply altered function or morphology in such tissue. Mere deposition of iron in an otherwise normal organ is simple hemosiderosis. If hemochromatosis and hemosiderosis were different degrees of the same process, there should be a high incidence of hemochromatosis in hemolytic and pernicious anemias. This is not true. Furthermore, attempts to reproduce hemochromatosis experimentally by repeated transfusions, by hemolytic agents and by injections of hemoglobin and of dialyzed iron have not been successful. In hemochromatosis there is a relatively small amount of pigment in the spleen, bone marrow, and in the kidneys.

Classification of Types of Hemochromatosis

1. Endogenous (idiopathic)
2. Exogenous[26, 27, 34, 41, 45, 51]
3. Nutritional[23, 24, 32]

Exogenous Hemochromatosis Excessive amount of iron may be accumulated by the administration of repeated transfusions, excessive parenteral administration of iron, or prolonged iron feeding over a period of years. It was first considered that hemochromatosis developed in these patients merely because they had received so much iron that this resulted in the deposition of abnormally large amounts of hemosiderin in various tissues with resultant hemochromatosis. However, cases of exogenous hemochromatosis are reported in which quantitative blood given by transfusion has been too small to account for the large amounts of iron found at autopsy.

Since the quantity of iron present in many cases of exogenous hemochromatosis exceeds that introduced through blood transfusions, it is apparent that these patients must have absorbed the difference through the gastrointestinal tract. There is a single common de-

nominator in all cases reported. This is anemia with various types represented: aplastic or refractory, hypochromic microcytic, anemia of uremia. Radioactive isotope studies[46] have shown that some anemic patients continue to absorb large quantities of iron and develop hemochromatosis even without transfusions. It is possible to postulate that some patients with varied anemias will continue to absorb iron from the gastrointestinal tract as long as they are anemic whether or not the body is in need of or can make use of such iron.

Nutritional Hemochromatosis Gillman and Gillman studied South African natives on deficient diets and found large deposits of iron in the parenchymal tissue of the liver and in other organs. They performed biopsies on the liver on 120 patients suffering from pellagra. 12% of the adult patients had pigmentary cirrhosis with iron pigment present. An additional 18% had what they termed pre-cirrhosis with iron pigment present in the livers in lesser quantities. They noted that the earliest evidence of the appearance of iron is preceded by visible changes in the mitochondria lying immediately distal to the nucleus. They concluded that hemosiderin and hemofuscin are derived from these pre-existing elements, mitochondria, within the liver cells. They designated hemofuscin, cytolipochrome and hemosiderin, cytosiderin. Deposits of hemosiderin are the result of disruption of the mitochondria which they claim to be a manifestation of chronic malnutrition. Gillman and Gillman further concluded that hemochromatosis is not an uncommon disease in Africa on the basis of observation of 700 livers from autopsies in sudden and violent death of the natives. These writers suggested that their work has established malnutrition as one cause of pigmentary cirrhosis.

Experimentally Kinney and coworkers[21] found that rats kept on diets deficient in protein, minerals, and vitamins, with large supplements of ferric citrate will absorb a greatly increased amount of iron and deposit it in the liver and other tissues. Hegsted et al.[22] demonstrated that gross diminution of phosphates in the diet will increase the absorption and storage of iron in rats. As a result of these experiments the increased absorption and storage of iron observed clinically by Gillman and Gillman are now attributed to a disturbance of the iron-phosphorus ratio in the diet while the fatty and fibrous changes in the liver can be ascribed to deficiency of dietary protein.

Pathology and Physiologic Complications

Hemochromatosis is characterized by the following pathological features:

1. Deposition of hemosiderin, particularly in the gland cells of both external and internal secretion; in striated muscle.

2. Fibrotic changes.

3. Cellular degeneration, this being least prominent.

The relation between the deposition of iron pigment in various organs and the histologic and functional changes in these organs is not established.

Three possibilities are considered:

1. Increased absorption and storage of iron is the primary cause of disease with all other manifestations secondary to this.

2. Changes in the organs involved are primarily and secondarily lead to in-

creased absorption and storage of iron.

3. An unknown primary disturbance causes the abnormalities of iron metabolism as well as functional and structural organic changes.

A serious objection to the view that excessive deposits of hemosiderin in some organs are responsible for functional and structural alterations in these organs lies in the fact that organs with heavy deposits sometime produce no detectable changes in function or structure.

Liver and Cirrhosis The liver is the organ most commonly involved. It is characteristically enlarged and firm. The surface usually is rough. The deposits of pigment give it a reddish brown or rusty appearance. There is a Laennec type of portal cirrhosis with intersection of lobules by fibrous tissue bands. There is a light patchy distribution of hemosiderin in the parenchyma but large clumps of pigment are present in Kupffer cells. Hemofuscin is deposited chiefly about the adventitial coat of blood vessels. Quantities of iron equal to 20 Gm. or more may be found in the liver in contrast to a normal tissue iron content of less than 1 Gm.

Possible Explanations of The Changes of Cirrhosis 1. The pigment causes a reaction to a foreign body in the form of connective tissue proliferation.[52]

2. The pigment causes a cellular degeneration with replacement fibrosis.[24]

3. Granick[29] considers that iron which is not converted to the proper kind of ferric hydroxide may bring on cell destruction by precipitating proteins indiscriminately or perhaps by inactivating one or more specific enzymes.

Althausen et al.[3] studied the functional efficiency of the liver in hemochromatosis and concluded that a moderate impairment of hepatic function is usually present by the time cirrhotic changes can be demonstrated histologically. Negative findings of liver function tests do not rule out the presence of hemochromatosis in the precirrhotic stage. Marked impairment of hepatic function usually indicates the terminal stages of cirrhosis.

Primary Hepatic Carcinoma in Hemochromatosis [25,65,66] Warren and Drake,[65] in reviewing the literature on the incidence of primary carcinoma in hemochromatosis found 18.9 per cent as the average incidence as compared to 4.4 per cent as the incidence of primary hepatic carcinoma in portal cirrhosis. The outstanding feature of the gross examinations of hepatoma was the invasion of veins by the carcinoma. There was preferential involvement of the right lobe of the liver and portal radicles and the tumors usually were of multinodular type. Metatases were more common than expected in primary carcinoma of liver. The authors were able to draw no correlation between duration of hemochromatosis and incidence of primary hepatic carcinoma.

Pancreas and Diabetes Mellitus The pancreas is characteristically reddish brown in color, is firm, enlarged, and cirrhotic. Hemosiderin and hemofuscin are deposited in the acini and islet cells. The normal architecture of the pancreas is largely replaced by fibrous tissue and there is regeneration and actual loss of acini and islet tissue.

Question of Insulin Resistance When the diabetes in hemochromatosis was first treated with insulin, great difficulties in stabilizing patients were encountered.[33, 34, 35, 36, 49, 52] As a result the

opinion prevailed that patients with hemochromatosis are resistant to insulin. Althausen et al.[5] feel that the opinion is no longer tenable in the light of present knowledge.

According to Duncan,[35] diabetes mellitus in hemochromatosis occurs as a complication and is an index of the damage to the islet cells of the pancreas. He states that the diabetes can be controlled but it may in rare instances become increasingly severe and the patient may pass through a state of increasing insulin resistance to one in which insulin is completely ineffective. Duncan believes that hemochromatosis with its relentless destruction of the functional integrity of the islets of Langerhans and its effect upon the function of the liver also causes in some patients complete ineffectiveness of insulin. Root[32] gave 1630 units of insulin in 24 hours without preventing death in diabetic coma. There must be some other factor at work other than destruction of the insulin producing mechanism as the units of insulin given these patients greatly exceed the normal production of insulin. Root suggested that the liver may lose its function of removing glucose from the blood and storing it as glycogen and that skin and muscles similarly affected functionally were deficient in removing glucose from the blood.

Heart [5, 53, 57, 58, 59, 60, 61, 62] In the heart hemosiderin appears to be present in a bipolar spindle-shaped formation around the nucleus spreading longitudinally through muscle fibers. No particular part of the heart appears especially liable to pigmentation. Hemosiderin is scant in connective tissue. Chemical determinations reveal 2 to 19 times normal iron content with no noteworthy variation between right and left ventricle. Fibrosis in varying degrees is present but the degree of fibrosis and the extent of iron pigmentation bore no significant correlation. Constant microscopic findings are degenerative changes such as disproportion of sarcoplasm to myofibrils, fragmentation and separation, fiber hypertrophy, pyknosis, cloudy swelling, vacuolar degeneration.

In recent years there have been 33 reports[62] of heart failure in case of hemochromatosis not explained by the usual forms of heart disease. Heart failure is the outstanding manifestation of cardiac involvement in hemochromatosis. Involvement of the heart is also commonly associated with arrhythmias, auricular fibrillation and complete heart block. The exact mechanism of the development of arrhythmias and failure is not known. The average period of survival after onset of cardiac symptoms is less than a year. The response to medical treatment is uniformly poor.

Skin and Pigmentation The gross appearance of the skin is one of dryness and thinning with conspicuous lack of hair. The microscopic study shows an atrophy of epidermis and also of hair and sebaceous glands. The epidermis is sometimes reduced to a flattened sheet, some 4 or 5 cells thick with flattening of interpapillary processes. The melanin content of the cells in the basal layers is consistently increased sometimes to a gross degree. It appears that the increase in melanin is responsible for the brown pigmentation while the "slaty" bluish-gray appearance of some areas is probably produced by viewing an increased amount of melanin through a greatly reduced number of superficial epidermal cells. Hemosiderin varying in amounts from

a trace to considerable quantities is found in the connective tissue cells of the corium, usually concentrated in the cells about and in the acini of the sweat glands.

In about half of the cases the skin pigmentation is due to melanin and in the other half is due to hemosiderin. It is probable that the increased melanin deposition represents a change secondary to the hepatic cirrhosis so frequently observed. Extensor surfaces of the lower forearms and dorsum of the hands are usually the most deeply pigmented. Mucous membranes and gums may be pigmented. This involvement may be attributed to secondary involvement of adrenal glands by hemosiderin but there is no direct correlation between intensity of pigmentation of skin and degree of involvement of adrenal glands. All in all the reason for melaninosis in hemochromatosis is not clear.

Adrenals Hemosiderin is deposited in the outer layer of the cortex, in the zona glomerulosa with slight increase in fibrous tissue. The possible relation to melaninosis has already been noted.

Parathyroids may also be infiltrated with pigment and as a result abnormal calcium metabolism and osteoporosis may result.

Hypophysis Hemosiderin has been noted in the parenchymatous cells and may contribute to the genital hypoplasia noted in hemochromatosis.

Spleen and Bone Marrow and Lungs contain relatively little pigment.

Kidneys The pigment is seen in small quantities within the epithelial cells of the tubules. There is no sclerosis.

Gastric Mucosa Hemosiderin can be found in chief cells of the mucosa and its presence has little or no effect on the secreting activity of the gastric glands.

Lymph Nodes The portal and pancreatic lymph nodes are the most commonly involved but none are immune. The glands are slightly enlarged and may vary in consistency and are deep brown or bright yellow.

Striated Muscle is frequently the site of excessive pigment deposits while smooth muscle rarely contains hemosiderin.

The thyroid, prostate, and testes also may contain the iron pigment.

The total body iron of 4 to 5 Gm. may be increased tenfold.

Clinical Features

Incidence Hemochromatosis is a rare disease. Its incidence as noted by various authors is as shown below.

Age The maximum incidence of hemochromatosis is in the age group between 40 and 60 years. It is practically unknown in patients under 20.

Sex Hemochromatosis is much more common in males and is roughly 20

Author or Source	No. of Cases	No. & Type of Cases	%
1. Cain[9],—U. Tex. Med. Sch. (1940)	6	5,000 Autopsies	0.12
2. Althausen[58],—U. Cal. Hosp. (1933)	3	60,000 Admissions	0.005
3. Lisa & Hart[66],—N. Y. Hospitals (1939)	7	124,000 Admissions	0.004
4. Stewart[99],—British Hosp. (1921)	52	38,096 Autopsies	0.136
5. Butt & Wilder [39],—Mayo Clinic (1938)	30	—	0.005
6. Mills[70],—Boston City Hosp. (1924)	16	3,760 —	0.42
7. John[67],—Cleveland (1939)	1	5,000 Diabetes Mellitus	0.02
8. Boulin[68], (1945)	70	4,266 Diabetes Mellitus	1.64

times more frequent. In Althausen's series,[3] there were 20 males to 3 females. In Butt and Wilder's[29] series of 30 the ratio was 29 to 1. It has been suggested that the loss of iron which normally occurs with menstruation and pregnancy may be a factor. In the 3 female patients in Althausen's study of 23 patients with hemochromatosis there was an abnormal menstrual history with some extrinsic factor reducing this loss so that considerably less blood was lost during the reproductive period.

Family History Hemochromatosis has been observed to occur as the result of familial and hereditary predisposition. Sheldon[26] in his study of 311 cases reported 5 instance in which brothers were affected. This led him to believe that hemochromatosis was an inborn error of metabolism. Lawrence[17] described a family of 9, in which 2 brothers had proven hemochromatosis. Three brothers and the mother but none of the sisters had some of the signs of the disease. This suggested that the disease may be a sex-linked hereditary disease, transmitted by females and affecting mostly males.

Symptoms and Signs Hemochromatosis is characterized by four features:

1. Enlargement of the liver
2. Pigmentation of the skin
3. Diabetes mellitus
4. Sexual hypoplasia with testicular atrophy, lack of body hair, diminution in sexual libido.

According to all clinical evidence it requires at least 10 and probably 15 to 25 years or more to produce the symptom complex. It is a difficult disease to diagnose before it is well advanced.

The diagnosis is rarely missed when the tetrad of symptoms is present. However, the literature has many examples where one or more of these is absent.

Most frequently the first symptoms relate to hepatic involvement. In Sheldon's series 92 per cent had enlarged livers and in Butt and Wilder's series, 90 per cent. The spleen was enlarged in 60 per cent and 30 per cent of these studies respectively. Althausen found the liver to be enlarged 8 cms. or more below the costal margin in 13 to 23 patients. Abdominal pain and ascites were occasionally present. Hematemesis and jaundice were rare.

Skin pigmentation is usually one of the first symptoms to attract attention. The skin is of fine texture, shiny or thin, dry and scaly. In Butt and Wilder's series it was the first symptom in 40 per cent, in Sheldon's 26 per cent. The pigment may appear early or late. Its distribution is usually general although exposed areas are affected most; face, neck, arms, legs. Sheldon found 84 per cent have skin pigmentation. Mucous membranes may be affected in 16 per cent of cases. Gums may be affected. The change in color of skin is not always present and may be absent in approximately 20 per cent of cases.[29] Lisa and Hart,[64] contend that 75 per cent of cases will have no bronzing.

In Sheldon's series 78 per cent of cases had diabetes mellitus and it was the first symptom in 26 per cent. Diabetes mellitus is present at death in three-fourths of the cases although in the early stages of the disease it is rarely seen. Krainin[15] states that 20 per cent of cases are not complicated by diabetes.

Regression of secondary sexual characteristics occur in over half of the cases. Genital hypoplasia, impotence and loss of secondary sex characteristics

may be marked. Involvement of testicular tissue by hemosiderin may occur early with hypogonadism as early evidence of the disease. Krainin believes that the regression of secondary sex characteristics probably is due to faulty inactivation of estrogen by liver and is to be expected only when metabolic inadequacy of the liver exists. Althausen believes that another possible explanation for loss of libido and for the atrophy of male sex organs lies in the changes in the anterior lobe of the pituitary.

Weakness and easy fatigability are prominent symptoms of the disease. These were present in 20 of 23 of Althausen's patients, severely in 12 and moderately in 8. In Butt and Wilder's series asthenia was the chief complaint of 10 of 30 patients on hospital admission. H. L. Smith [33] believes that the weakness may be attributed in part to the depressed function of the pituitary gland and that the adrenals inactivited by deposits of hemosiderin may be a contributing factor.

Prognosis The prognosis of hemochromatosis has changed since the discovery of insulin. In the pre-insulin era half of the patients died in diabetic coma, 11 per cent of cirrhosis of the liver, 10 per cent of pneumonia, 9 per cent of pulmonary tuberculosis, 7 per cent of primary carcinoma of the liver, and 13 per cent of intercurrent infection and congestive heart failure.

Sheldon stated that the average duration of life with the appearance of diabetes is on the average 18.5 months. Butt and Wilder found the average length of life after diagnosis to be between 4 years and 8 months; the longest, 13 years, the shortest, 2 years.

Liver failure is now responsible for most fatalities. Primary carcinoma of the liver occurs in 15-20 per cent.

Diagnostic Procedures

1. Skin Test Fishback's [37, 38] technique consists of mixing equal parts of sterile solutions of 0.5 per cent potassium ferrocyanide and 0.01 normal HCl and injecting 0.3 cc. intradermally to form a wheal against a control of the 0.01 normal HCl. A positive test is present if a slight blue color becomes evident almost immediately which darkens to a deep blue within an hour. No harmful effects have been noted and the test appears specific for the disease.

2. Rous Test of Urine Sediment [14] A fresh specimen of urine of at least 20 cc. and ideally 60-100 cc. is centrifuged at high speed and the supernatant fluid is poured off as completely as possible. The sediment is examined for suggestive orange and brown granules, more particularly in cells. Sediment is suspended in a fresh mixture of 5 cc. each of 2 per cent potassium ferrocyanide and 1% HCl, centrifuged 10 minutes. The supernatant is discarded and a drop of the sediment is mixed on a slide with a drop of 1% HCl. By this modification of Pearl's reaction the cells are well preserved.

The hemosiderin will begin to turn blue as soon as the acid has been added or within the next half hour.

3. Biopsies of Liver, Skin, and Gastric Mucosa

a. *Liver biopsy* [12]: Since excessive accumulation of hemosiderin in the body becomes manifest first in the hepatic parenchymal cell, examination of the liver provides a definite criterion for establishing a diagnosis of hemochromatosis.

b. *Skin biopsy:* Care should be exercised against excising skin from the axilla or groin or any part of the body where normally small amounts of iron pigment may be present with characteristically large amount of melanin.

c. *Gastric biopsy*[7, 8]: In 11 patients of Althausen's study in whom gastric biopsy was performed, hemosiderin could be demonstrated in every instance. There was a rough correlation between the intensity of pigmentation of the liver and that in the gastric mucosa.

4. The Techniques Which Demonstrate Excessive Iron are valid diagnostic procedures for hemochromatosis in the absence of those types of anemia associated with a disturbance in iron metabolism.

a. An elevated serum iron level with saturation of the iron-binding (siderophilous) protein of the serum. The normal Fe-transferrin serum iron in micrograms per 100 cc. serum is 120 micrograms (50-150.) In hemochromatosis it is 225 micrograms.

b. If a test dose of 70 gm. of ferrous iron is fed by mouth, 20 per cent is retained by hemochromatosis patients. A normal individual would retain 2 per cent or less of such a dose.

c. Studies of radioiron fed orally to patients with hemochromatosis indicate increased absorption most of which is stored in the liver.

Treatment

Treatment of hemochromatosis is based on the removal of excessive stores of iron.

1. *The effect of repeated phlebotomies*[4, 5]. Since the rare occurrence of the disease in females may be explained by the recurrent iron loss through menstruation during those decades of life which might be called the incubation period of the disorder, it was logically suggested that frequent phlebotomies might remove these massive deposits of iron and either halt the progression of tissue damage or perhaps even reverse some of the injury produced by its presence. Warthin et al.[4] followed a patient with hemochromatosis for 4 years. During first year of observation steady downward progressive changes occurred. In the succeeding 3 years repeated phlebotomies totaling 30 liters which removed an estimated 15 gm. of iron were performed. There was regression of the severity of diabetes, loss of skin pigment. There was return of the liver to near normal by examination and function suggesting that a portion of the pancreatic and hepatic changes is at least partially reversible and not entirely due to fibrosis tissue replacement of cells.

Weekly phlebotomies of 500 cc. are well tolerated. Each phlebotomy represents the removal of 200 to 250 mg. of iron from the blood which is replaced by an equivalent amount of iron from tissue stores. In contrast to normal persons who rapidly become anemic on this regimen as their iron stores are depleted, patients with hemochromatosis maintain their hematocrit between 35-45 per cent. Over a period of 2 to 3 years the bulk of the iron deposits will be mobilized for hemoglobin production and removed by the bleedings. Reversibility of the process will depend on the amount of tissue damage

present before the therapeutic procedure is undertaken and to what extent the iron per se is responsible for tissue damage.

2. *Use of chelating agents:* The attempts to use chelating agents intravenously administered to form iron complexes which can be excreted via the bile or urine have not proven practical yet since too little iron is eliminated this way.

To limit iron absorption in the food organic chelating agents might be tried including a diet high in phosphate which would render the iron insoluble. To prevent the formation of ferrous iron, the form in which iron is absorbed, an oxidant like vitamin K as the naphthoquinone might be included during a meal and reducing agents like ascorbic acid might be decreased during a meal.

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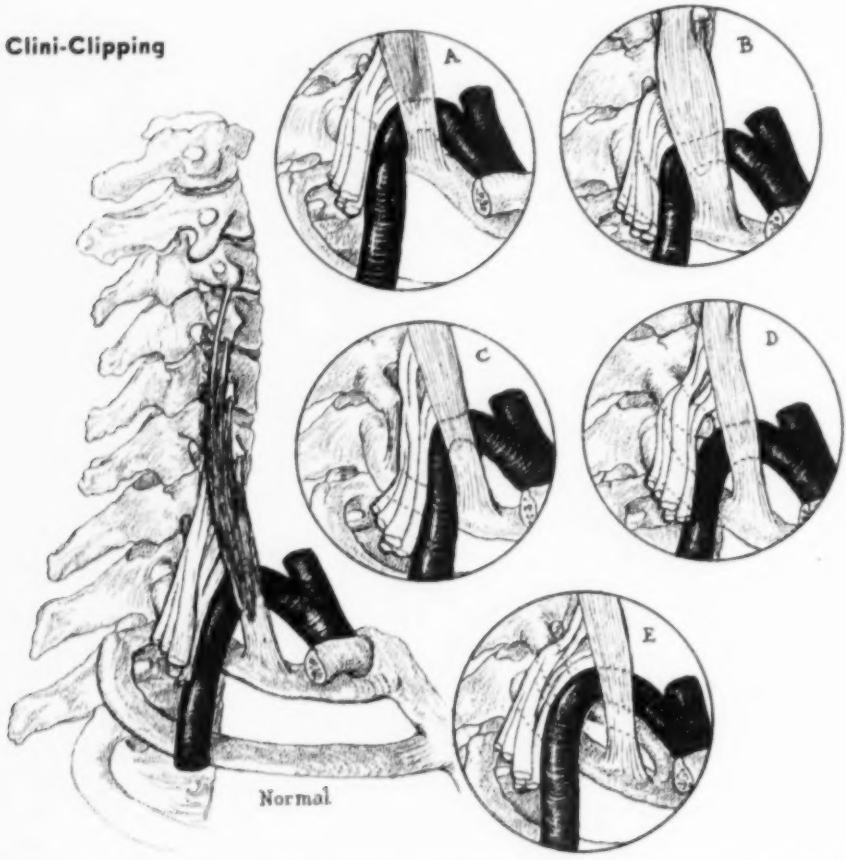

Cervical rib and the scalenus anticus syndrome. The normal diagram shows the anatomical relation of the vertebrae, the brachial plexus, the subclavian artery and the anterior scalenus muscle.

A. Compression of the artery and nerves against the first rib by an abnormal lift of the rib by the muscle. Scalenus anticus section relieves the compression.

B. Compression of the artery and nerves by excessive muscular development of the anterior scalenus muscle. Section of the muscle relieves the compression.

C. Compression of the artery and nerves against the fibrous prolongation of a short cervical rib. Section of the fibrous prolongation relieves the compression.

D. Elevation of the brachial plexus only by a short cervical rib. Removal of rib relieves the nerve disturbances.

E. Displacement upward of the artery and nerves by cervical rib more than 5 cm. long which fuses with the 1st thoracic rib. Removal of the rib relieves the condition.

Doctor, Are My Feet Flat?

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A question familiar to all physicians. To help answer this question, the major physical points for the differentiation of flat, normal, and cavus feet are presented. No attempt is made to deal with congenital foot deformities in infants, abnormalities of gait, etiology and pathology of foot problems, or specialized therapeutic measures. Such subjects are beyond the scope of this paper.

The term "normal" when applied to human anatomy, today implies a range of variations distributed in accordance with the bell-shaped curve of probability. Many foot conformations, which in the past might have been called abnormal, are now classified in the "normal range." Today, those feet varying physically from the "normal average," but not presenting the clinical picture of the true clinico-pathological foot forms, are regarded as "normal variants."

Table I, prepared by combining the statistics of the Canadian Army Foot Survey and the Armored Medical Research Laboratory report, presents these data in categories of "normal average," low arch variants, high arch variants, and true clinico-pathological pes planus and pes cavus deformities. Admittedly these data are skewed: the Canadian Survey reports only males of military age examined at an induction station; the Armored Laboratory reports only males (divided into whites and Negroes) on active military duty. But until an authoritative study of the general population is reported, these figures can be useful as a rule of thumb.

The term pes planus, or flat foot, has been used as a medical waste-basket for any foot form with a lower long arch than the examiner felt was normal. This situation was, in large part, due to a failure in the past to appreciate the existence of a range of normal variants from the "average foot" conformation. No attempt was made to restrict the use of the term pes planus to clinico-pathological states. Many

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Table 1

Categorical Distribution of Flat, Normal, Cavus Feet

SOURCE	PES PLANUS (Pathological)	LOW ARCH (Normal variant)	NORMAL AVERAGE (Non-exceptional)	HIGH ARCH (Normal variant)	PES CAVUS (Pathological)
1. Canadian Army Foot Survey (3619 males; pre-induction physical exam.)	6%	15.7%	66.5%	10.9%	0.9%
2. Armored Med. Res. Lab., Ft. Knox, Ky. (5000 white males on active duty.)	——	8.64%	69.44%	5.0%	——
3. Armored Med. Res. Lab., Ft. Knox, Ky. (1600 negro males on active duty.)	——	18.75%	52.76%	2.65%	——

normal low arch variants of no clinical significance were improperly lumped together with the true flat feet. As a result, the general public has become conditioned to feel that any foot with a low arch constitutes a pathological condition and requires treatment. Such feet in children cause the parents much consternation, and bother the owners not at all. In male adults, such low arch forms become a source of complaints, familiar to all military surgeons, designed to evade or alleviate the rigors of military duty.

Similar problems of misclassification of cavus foot forms are not frequent: probably because the general public thinks a high arch is fashionable and desirable, hence rarely consults a doctor unless the condition is truly pathological and producing significant symptoms.

A true pes planus or pes cavus is usually symptomatic, and often disabling. The treatment varies with the case, and is often prolonged and complicated. Such cases are best referred to an orthopædic surgeon. In general, most "normal variants" are non-disabling, and are symptomatic only from a cosmetic standpoint. A bit of psychotherapy, properly fitted shoes, and the addition of a conservative therapeutic

Key to Table

1. Derived from "Table Showing Variation of Support of Head of Talus in Different Types of feet." These figures are probably more representative of a general population than those of the Armored Lab. of Ft. Knox.

2. Derived from table titled "Foot Measurements: Summary of Clinical Findings." These data are considerably out of line with the general population, inasmuch as all significantly abnormal feet were weeded out prior to enlistment.

3. Derived from source 2, these data are presented for comparison only.

Table II

Comparison of Pes Planus, the Normal Average Foot, Pes Cavus

	PES PLANUS†		NORMAL AVERAGE	PES CAVUS
	HMFF	SPASTIC FF		
INCIDENCE	Bilateral	Uni- or Bilateral	Bilateral	Bilateral or Unilateral
REAR VIEW				
Achilles Tendon-Heel Alignment	More than 5° VALGUS*§	More than 5° VALGUS*	Straight	More than 5 degrees VARUS*‡
Mid-Foot (Tarsal region)	PROMINENT*	PROMINENT*	Normal	CAVUS* (excavated)
Forefoot	VALGUS*	VALGUS*	Straight	VARUS*
Great Toe	HIDDEN*	HIDDEN*	Visible	VISIBLE*
Little Toe	VISIBLE*	VISIBLE*	Visible	HIDDEN*
FRONT VIEW				
Toes	Normal ground contact	Normal ground contact	Normal ground contact	CLAWED* (HAMMER TOES)
PALPATION				
Plantar Surface	Normal	Normal	Normal	Callosities over 2nd, 3rd, 4th metatarsal heads
Dorsal Surface	Normal	Normal	Normal	Callosities over dorsal aspect of toes
Tarsal-Tarsometatarsal Mobility	Increased	Decreased	Normal	Normal
Ankle DorsiFlexion	Decreased	Normal	Normal	Often decreased

† Harris and Beath describe two major groups of clinico-pathological pes planus: Hypermobile Flat Foot with Short Tendo Achillis (abbreviated above HMFF) and Peroneal Spastic Flat Foot (abbreviated above Spastic FF). Different in etiology and patho-physiology, they are readily differentiated by palpation.

* Starred items must be present before a given foot conformation can be designated as true, clinico-pathological pes planus or pes cavus. Feet lacking any of the starred components represent normal variants of high or low arch types.

§ Synonyms: pronated, everted, swung-out, abducted.

‡ Synonyms: supinated, inverted, swung-in, adducted.

device such as a Thomas heel, a medial heel wedge, or a cork-rubber longitudinal arch support frequently effects a symptomatic cure. But remember, the physical form of the foot itself will change very little if any.

How then does one decide upon the proper classification of a given foot? By History? An accurate history is of importance in determining etiology, progression, and prognosis. A history of familial deformities, trauma, or illness is of great importance in the study of foot complaints. But the history is not essential to the morphological classification. Only an accurate physical evaluation provides the answer to the question, "Doctor, are my feet flat?"

The time-honored modalities of inspection and palpation are utilized for the physical evaluation of foot forms. To these x-ray is added in selected cases.

Inasmuch as the foot is functional only during weight bearing, inspection must be carried out during weight bearing. A non-weight bearing inspection (Figure 4A) might be likened to the auscultation of a chest for rales while the patient holds his breath.

Inspection is ideally conducted with the legs bare to above the knees, feet bare and 3 to 4 inches apart with the

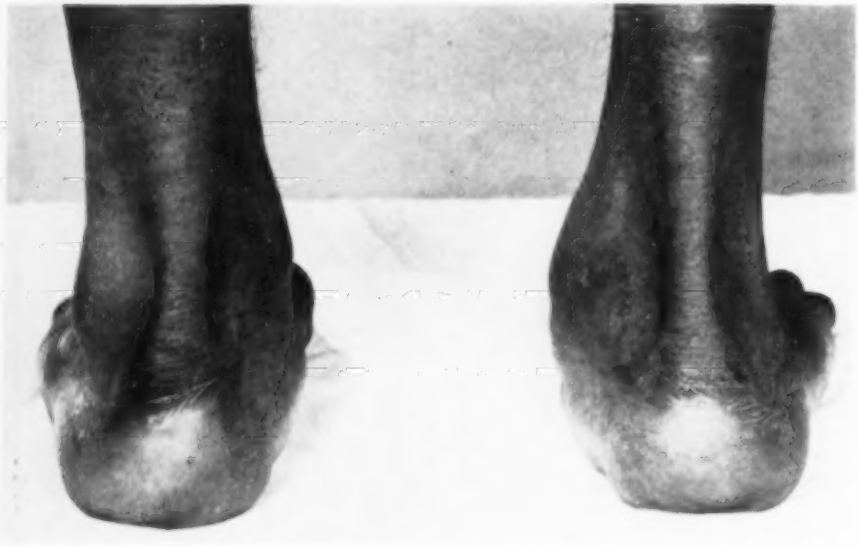

Fig. 1A. Normal Variant: Low Arch Type. Rear View.

Negro male presenting the low arch form responsible for the common statement that Negroes are all flat-footed.

LEFT FOOT: shows less than 5 degrees valgus heel shift, prominent mid-foot (head of talus) protrudes beyond the line of the malleolus, both large and small toes are visible.

RIGHT FOOT: shows straight heel, very prominent mid-foot (note old injury scar) and valgus shift of forefoot with 4th and 5th toes visible.

Neither foot fulfills the criteria for a diagnosis of pes planus. Both are therefore normal variants, low arch type, the right foot showing valgus forefoot in addition.

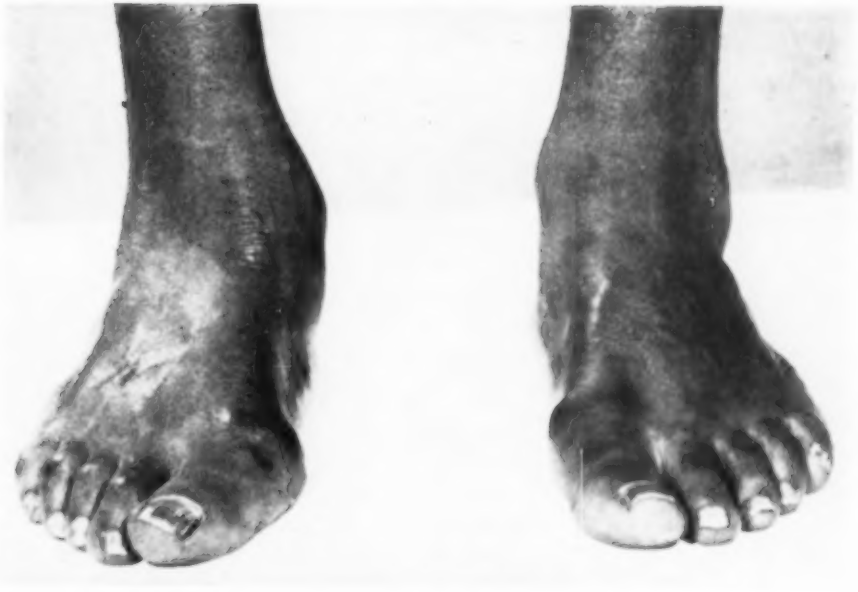

Fig. 1B. Normal Variant: Low Arch Type: Front View.
LEFT FOOT shows prominence of midfoot; the head of the talus is nearly in contact with the floor; the toes show normal ground contact.
RIGHT FOOT shows marked prominence of the midfoot (result of injury). Toes show normal ground contact.

medial borders parallel. The weight must be borne evenly on both feet. The patient must stand in a relaxed manner, as muscular activity can influence the appearance of the feet. Inspection is primarily from the rear and frontal aspects; a side view contributes little. Palpation is best accomplished with the patient seated. Remember that both feet may not show identical conformations.

Inspection: Normal Average Foot
REAR VIEW

1. Achilles Tendon—Heel Alignment: A line drawn vertically down the center of the Achilles tendon, and extended through the center of the heel will be a straight line, plus or minus 5 degrees. (Figure 1A).

2. Mid-Foot (Tarsal) Region: does not protrude to the line of the medial malleolus, nor should the head of the talus be near the floor as in Figures 4B, 4C. (Prominence of the mid-foot has caused many normal low arch variants to be called pes planus.) Conversely, the long arch must not be so concave as to cause bow-stringing of the spring ligament.

3. Forefoot: sighting down a line drawn through the center of the heel, and parallel to the medial border of the heel and mid-foot, both the great and little toes should be equally visible. (Figure 2A).

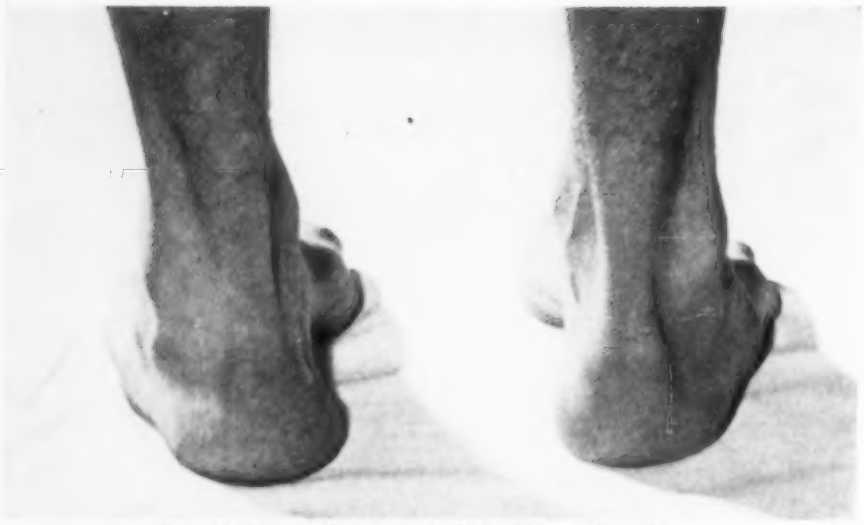

Fig. 2A. Normal Variant: High Arch Type: Rear View.

LEFT FOOT shows 10 degree varus heel shift; midfoot is excavated (long arch very high); forefoot is straight with both great and little toes visible.

RIGHT FOOT is essentially the same.

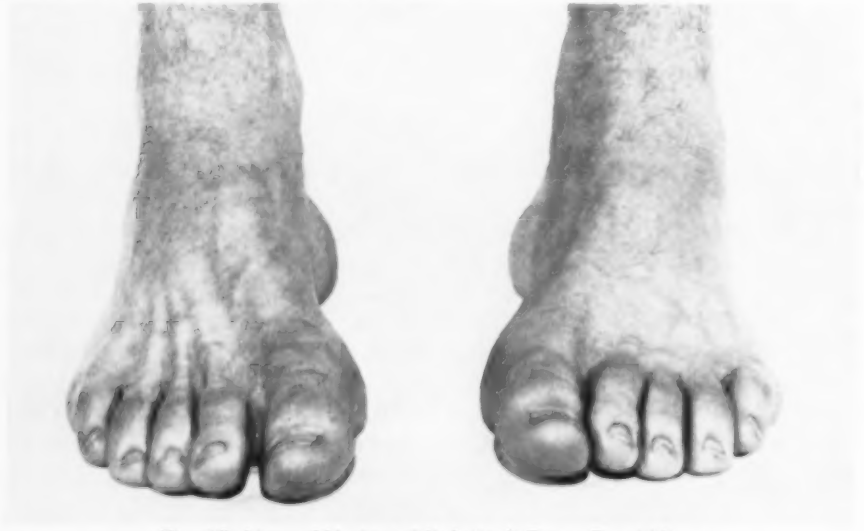

Fig. 2B. Normal Variant: High Arch Type: Front View.

LEFT FOOT SHOWS varus heel shift; excavated midfoot; toes show good ground contact with no clawing.

RIGHT FOOT shows essentially the same picture.

Although these feet present a varus heel shift, and a very high arch, the absence of forefoot varus shift and claw toes places them in the group of normal variants, high arch type.

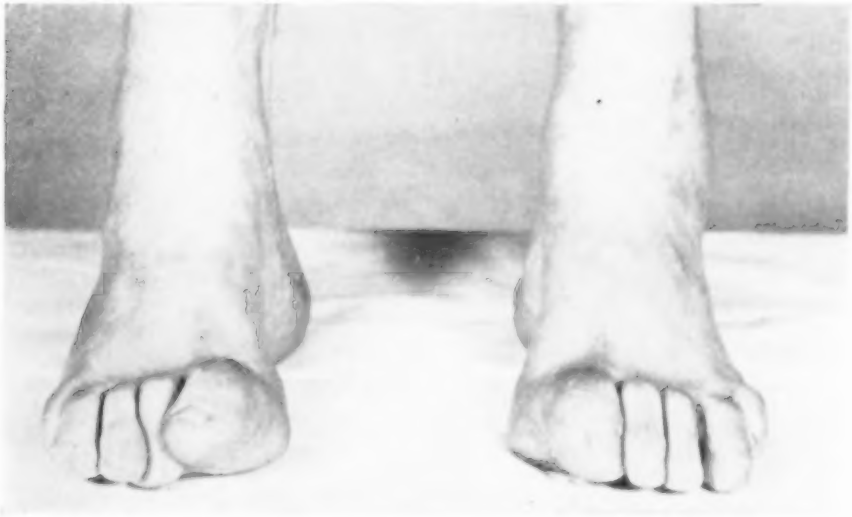

Fig. 3. Cavus Foot—Pathological. Front view.

(Rear view shows essentially the same picture as 2A except for increased varus of heels and forefoot).

LEFT FOOT presents essentially the same appearance as the left foot in 2B, except the TOES ARE CLAWED. Callosities are present on the dorsal aspect of the toes, although not clearly defined in this photograph.

RIGHT FOOT shows more varus of the heel than the left foot. The midfoot is more excavated, and the forefoot more in varus than either the left foot, or the feet in 2B. The toes are clawed, and show dorsal callosities.

These feet are clinico-pathological conformations. Both feet fulfill the criteria for pes cavus as presented in Table II.

FRONT VIEW

1. Toes: metatarsophalangeal and interphangeal points will be slightly flexed, with the pads of the distal phalanges in contact with the floor. (Figure 1B).

Palpation: Normal Average Foot

PLANTAR SURFACE: no abnormal callosities over 2nd, 3rd, 4th metatarsal heads.

DORSAL SURFACE: no callosities (corns) on dorsal surfaces of toes.

TARSAL-TARSOMETATARSAL MOBILITY: the normal range of inversion-eversion is probably 15 to 30 degrees for each motion. Studies establishing this beyond empirical clinical observations are not known to the author. This range varies with the personal characteristics of the patient's ligamentous structures which may be checked by examination of wrist, elbow, or knee motion. A loose jointed individual may show more foot mobility than a tight jointed one.

ANKLE DORSIFLEXION: at least 15 degrees with the knee extended.

All photographs in this article are used by permission of Lt. Col. R. W. Augustine USAF(MC) Chief of Orthopaedic Surgery, 3810th Medical Group, A.U., Maxwell Air Force Base, Alabama.

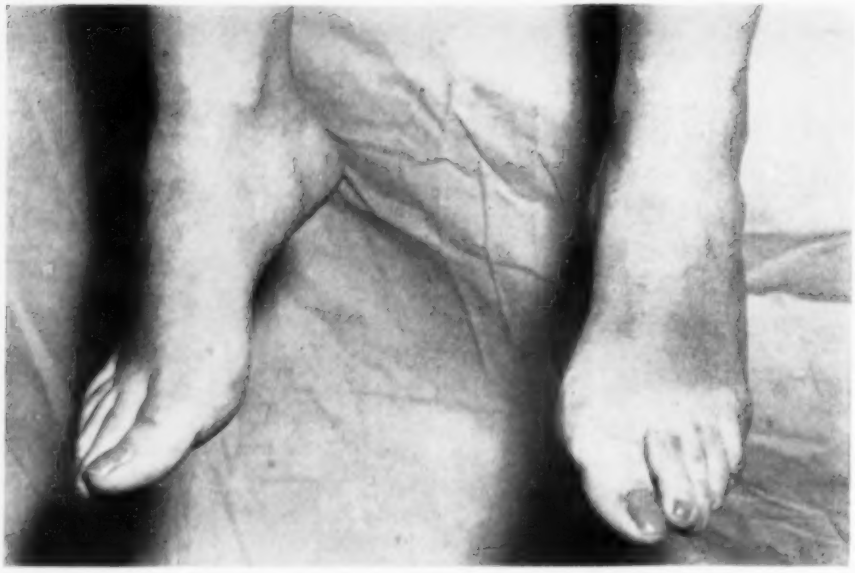

Fig. 4A. Flat Foot: Hypermobile Type with Short Tendo Achilles: Non-weight Bearing View.

Illustrating the fallacy of non-weight bearing inspection, the left foot shows no prominence of the midfoot, and a straight forefoot. The right foot presents an apparently well-developed long arch.

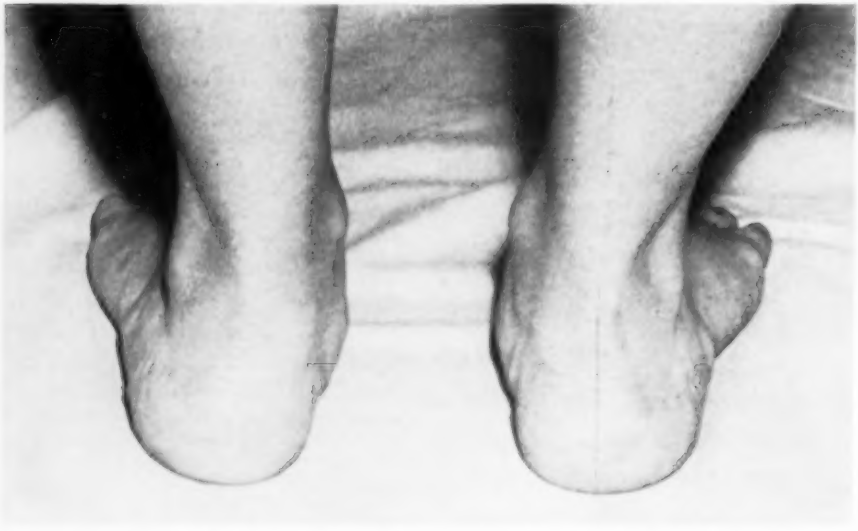

Fig. 4B. Flat Foot: Hypermobile Type with Short Tendo Achilles: Rear View.

Both feet show a 16-18 degree valgus heel shift, marked prominence of the midfoot with the head of the talus protruding beyond the malleolus and nearly touching the floor; the forefoot is in marked valgus with the 3rd, 4th, and 5th toes visible.

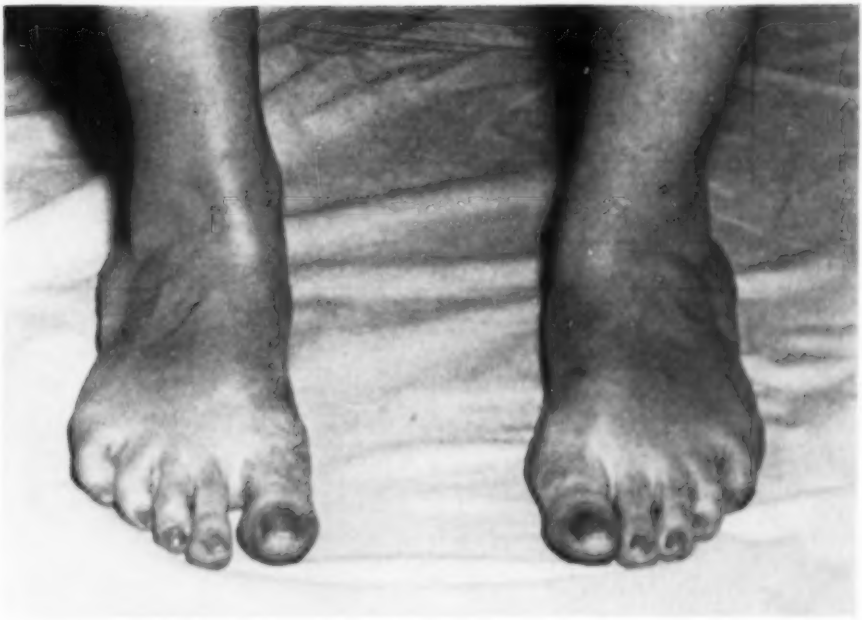

Fig. 4C. Flat Foot: Hypermobile Type with Short Tendo Achilles: Front View.
Both feet show marked valgus of the heel, prominence of the midfoot, and severe valgus shift of the forefoot. Toes show good ground contact.
These feet represent the classical picture of the hypermobile flat foot with short tendo Achilles as described by Harris and Beath. (Table II)

With the establishment of the method for, and results of the physical examination of the normal average foot, the differentiation of pes planus and pes cavus forms may be accomplished. Table II compares the results of the physical examinations of pes planus and pes cavus to the average normal foot. Each of the starred elements for either flat or cavus forms must be present before the foot may be considered a clinico-pathological conformation. The foot presenting only part of the picture of the true clinico-pathological state should be considered as a normal variant. Harris and Beath define the low arch variant as, " . . . the normal contour of a strong and stable foot rather than the result of weakness in foot structure or weakness of the muscles which motivate the foot." The same reasoning may be applied to the high arch variants.

Summary

A method of physical examination for the differentiation of clinico-pathological pes planus and pes cavus forms from normal variants has been presented in table form. Although developed at the Air Force Orthopedic Center at Maxwell Air Force Base, Alabama, for military use, this system should prove useful in a civilian practice.

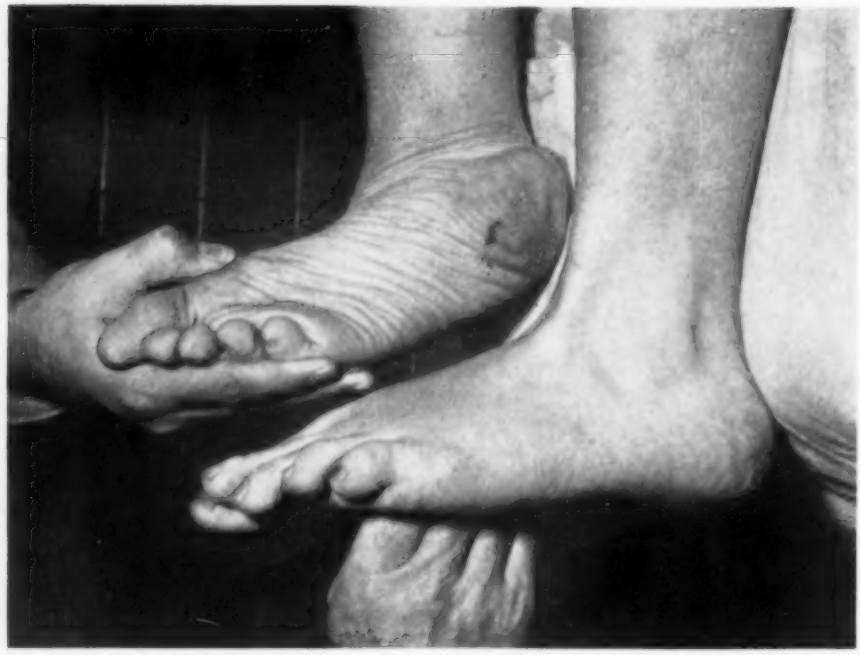

Fig. 4D. Flat Foot: Hypermobile Type with Short Tendo Achilles.

LEFT FOOT shows limitation of ankle dorsiflexion. With the knee extended, the short Tendo Achilles limits dorsiflexion to 75 degrees.

RIGHT FOOT shows the marked hypermobility of tarsal and tarsometatarsal joints present in this condition.

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218-219 Medical Arts Building

PANEL SEMINAR
ANORECTAL DISEASES

Fifth Scientific Session*

INTERNATIONAL ACADEMY OF PROCTOLOGY

DR. CAESAR PORTES (Moderator)

The Program Committee thought that it would be worthwhile to experiment with panel discussions, one on ano-rectal diseases which is going to take place now, and the other on colon diseases which will take place tomorrow. We feel that scientific papers are in order and really worthwhile. We have had beautiful presentations, but we feel that when people come to a convention they want to mix ideas, they want to learn as well as teach. The only way people can learn is to transfer ideas and experiences. Proctology has made tremendous progress in the past twenty-five years and that progress has been made because we have learned from one another. I still recall the days when the hemorrhoid operation was done very crudely. I remember one of proctology's fathers. I watched him do the operation, and he did nothing but pick up tissue and burn it, make a suture, and put in a rubber drain and sew the buttocks together. He fed the patient morphine for a week, and when he took the drain out the sphincter was paralyzed and the patient's bleeding was still present. We have gone a long way from that.

We have probably nothing of startling importance to give you; there is probably nothing so new that it will startle this audience. Many of us, when we come to a meeting of this kind, are aware of that. We are always hoping, however, that maybe someone can give us a little something new which we can use in our own practice.

If you want to know anything about proctology, you know yourselves that there are plenty of books. We can study; we can read. There is little new. What you know about hemorrhoids you probably picked up from a book, and I probably read it in a book, but the experiences you have had in doing hemorrhoidectomies is what we are after.

* Sixth Annual Convention, Chicago, Illinois, April 9, 1954.

Pruritus ani is a disease which everybody is concerned about. This treatment and that treatment have been tried. I heard Phil Thorek last Sunday give a talk before the Gastroenterologic Association, and I would like to give you his thought. He said he doesn't believe there is one fixed method of treatment, and I think it is a question of what each one has to offer.

We are going to try this panel today and see what happens. I want the audience to participate in this as much as the men who are on the panel. In other words, they have papers they will present for you. If there are any questions that you have to ask, or any discussion you want to offer, please write it on a piece of paper and present them to me. If there is still further discussion you want after your question has been answered, will you please use the floor microphone.

The panelists will please limit themselves to as close to ten minutes as possible. After that they will sit down and the next panelist will take charge. The questions and discussion will come at the end of the presentation of all these papers.

Without any further ado, let us proceed to the panel discussions. The first speaker of the afternoon will be Dr. Paul Lahvis, of Gowanda, N. Y., who will speak on "Office Treatment of Common Anal Diseases." Dr. Lahvis.

Office Treatment of Common Anal Diseases

PAUL LAHVIS, M.D.
Gowanda, New York

The first speaker on a panel discussion covering closely related subjects always is a threat to his co-panelists. He can steal their thunder by anticipating their arguments, he can by design or by implication, condemn or ridicule procedures or ideas which may be the basis of their presentation.

In a public and unrehearsed symposium of overlapping topics, he can be an infernal nuisance, and I therefore feel highly honored because I have been delegated to this responsible and ticklish job.

A discussion of the *COMMON* rectal and anal disorders should be a major feature of every meeting devoted to proctology. This unfortunately is not so. More people suffer from the common and lowly ano-rectal disorders than from any other group of medico-surgical disease. I mean "suffer" in the literal interpretation of "acute, painful discomfort."

The patients with the common things are the ones who fill our waiting rooms. Treating these common things well, distinguishes the master from the novice and the tyro.

It is always surprising to me how little this is understood by those in charge of preparing the programs for proctological scientific sessions. Nearly invariably they succumb to some subconscious desire to impress their audiences with the more heroic surgical achievements in a part of the bowel well above the 10 cm line which demarcates the humble low-brow proctologists from the minority of more high-minded experts. Unfortunately, however, as a result much that is spoken at these proctological meetings falls on deaf and disinterested ears. This, of course, works both ways, because the other group is equally disinterested in the more chronic proctological problems.

Those colleagues connected with the arrangements for this meeting deserve much praise because they have made a determined effort to balance the program so that the champions of the upper as well as the terminal digestive tract will find the desired mental stimulation.

It may be well to ventilate this in public and to suggest that similar practices may be followed at future meetings. It will immensely increase the practical take-home value of the sessions.

In this discussion of the office surgery of common anal diseases, I do not intend to speak to those of you who have practiced office proctology and already gained the experience which spells success. Rather, I prefer to address those who do not have the elaborate setup of the specialist in proctology but wish to give good service within the scope of an ordinary office, with not more than one non-physician helper, without an anesthetist and without facilities to permit a patient to recover from deep inhalation or caudal or spinal anesthesia.

Two positive considerations should govern your decision about your limitations in rectal office surgery:

1st) the quality of your work must be comparable to that delivered under optimal equipment and assistance conditions. This includes regional relaxation of the operative fields, full visualization and satisfactory hemostasis.

The second requirement for satisfactory office work is control of pain. That means that your patient is able to leave the office on his feet after an operative procedure which has been essentially painless. The post-operative pain must be within the scope of simple analgesics and not require hypodermic administration of narcotics.

First, let me express a very emphatic "Don't". Do not tackle a rectal abscess in your office in the belief that it is a simple and minor affair. Altogether too many complicated fistulae are the result of abscesses incised in offices by over-confident and relatively inexperienced physicians.

Rectal abscesses cannot be properly incised under local. Only general anesthesia or equivalent painlessness through spinal or caudal injection will suffice. A recent very valuable addition to our office equipment and one which may permit better abscess incisions and drainage in the office is the Duke Inhaler. With it you can obtain near-complete analgesia through inhalation of Trilene. It is safe, and because it is

patient-administered and controlled, requires no additional help.

In abscesses, any compromise below this level is disastrous to the patient.

It took me many years of repeated bitter experience to learn that I lacked the courage, and the patients would not let me make the deep incisions and establish the large opening for successful drainage, unless nearly complete analgesia or anesthesia was provided.

The little stab incision has created many rectal cripples.

The outward appearance of a rectal abscess nearly always is misleading. What looks like a small, pimple-like swelling with only moderate discomfort may be a cap over a volcano of pressurized pus.

This needs radical treatment. Incomplete anesthesia invariably leads to half-measures and unnecessary suffering for the patient.

The secret of successful office treatment of anal diseases is a knowledge of short and prolonged anesthesia and a mastery of infiltration procedures.

There is much pro and con discussion about the safety of oil infiltration. Many physicians are downright afraid of it and some anesthetists advise against its use. It seems to me that proctologists are the only group who can handle it well and good technic is essential for satisfactory results.

My own experience with oil covers more than 20 years and several thousands of infiltrations. I consider it safe and believe it to be the one indispensable item in my office and hospital work.

The simple posterior fissure—this is one of short duration and without indurated edges—is a fine and relatively safe setup for the practice of good procaine-oil infiltration technic.

The technic simply is to infiltrate 3 to 8 cc. of the solution of your choice, (Propalcaine or Rectalcaine, for instance), evenly into a wedge-shaped sector whose base is a rectangle including the fissure. The long side of the rectangle extends slightly above the pectinate line. Now, nothing seems easier than this little procedure. If done correctly, the patient's relief from pain is immediate and absolute, the sphincter is relaxed posteriorly only, while satisfactory evacuation control is maintained. One or two such treatments about 10 days apart are all that is needed. Yet, for all this simplicity, it is easy to miss some essential part of the wedge-shaped sector with the result that neither the spasm nor the pain are relieved. In that case, the fault is always yours, not the procedure's. Put your finger into the rectum, locate the sensitive area and infiltrate it thoroughly.

More difficult fissures, those of long standing and with indurated edges and a sentinel pile require relaxation of the entire sphincter for proper visualization of the operative field. This is also necessary for the excision of crypts and papillae. It can best be accomplished by short acting aqueous procaine for the sphincter and oil infiltration of the operative area.

Following this preparation you can do the excision of the ulcer area, the sentinel pile, or the diseased crypt.

Excision of tissue in the ano-rectal area causes bleeding which is always unpredictable. Office proctology requires perfect hemostasis. Minor bleeding, which a change of dressing and a nurse's reassurance will check, may well cause a panic and frantic telephone

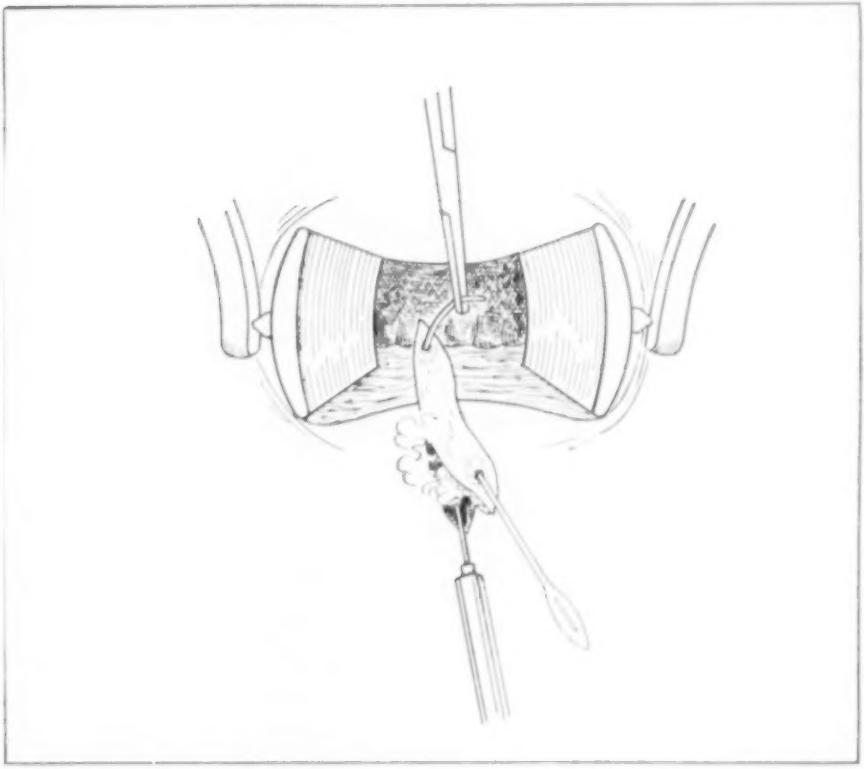
call from an ambulatory patient.

While clamp and tie, of course, can take care of every emergency, the acceptance of Thermal Cutting or hemostatic Units into our proctological armamentarium adds immeasurably to the quality and safety and postoperative comfort of our patients.

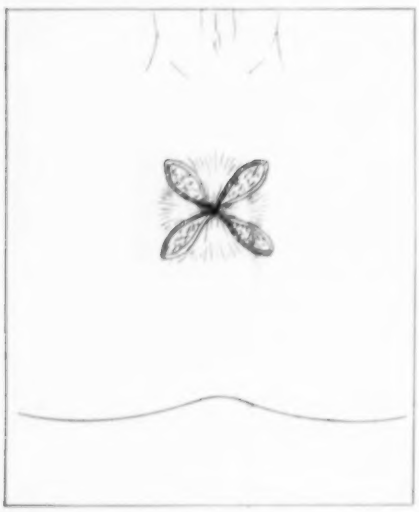
The Cantor Thermal Cutting Unit, The Post cautery equipment, and the Cosmo Cutting Units will satisfactorily check oozing and usually stop small vessels, and thus reduce the need for ties to a minimum.

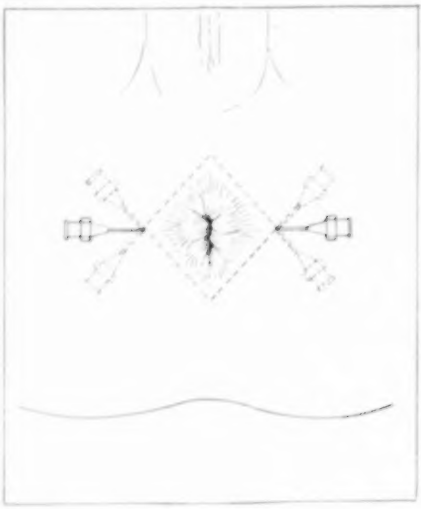
At this point I wish to emphasize the need for thorough and forceful massaging of the injected oil into the tissues as part of good technic. This should last at least one minute and much more in deep infiltrations. Lack of attention to this detail causes poor anesthesia and is responsible for sloughs which good judgment and experience usually can prevent.

With the introduction of Hydrocortone ointment, the treatment of pruritus comes within the province of the general practitioner, and fewer cases than before will come to our attention. In stubborn cases, tattooing, neurotomy or tattoo-neurotomy are indicated, and they can well be done in the office.



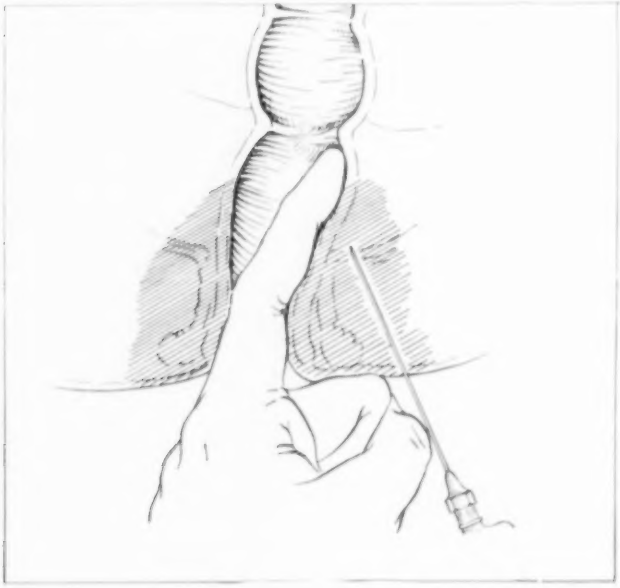
Electro-surgical excision of a fistula.

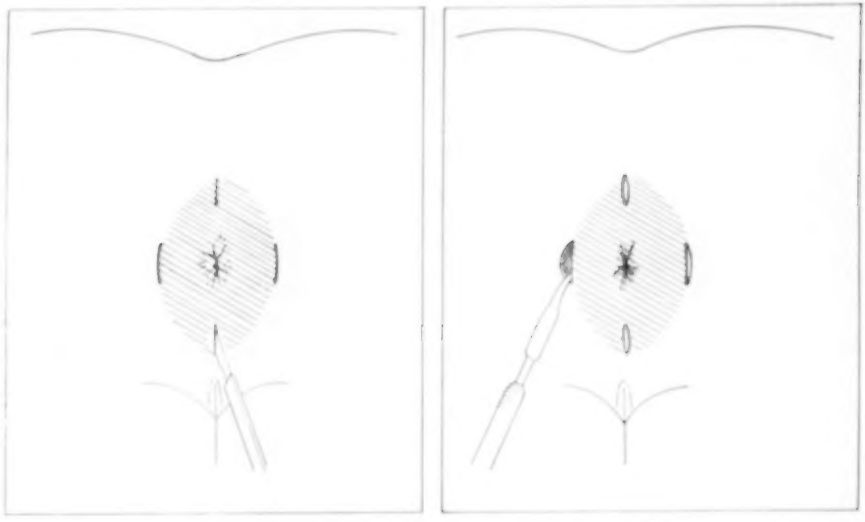




(Above left) Illustrates the excision of large wedges of perianal skin, a procedure of value in patients with markedly thickened, indurated skin.

(Above right and below) Illustrates the local injection of oil soluble anesthetics.





A B

Technic of tattoo neurotomy.

C

I prefer, for this purpose, to infiltrate the subcutaneous field with oil and then undercut the perianal field. The tattooing I prefer to do 4 to 7 days postoperatively into the still numbed skin. The reason for this deviation from the usual method of tattooing before the neurotomy phase, at one session, is my observation of severe sloughs in elderly patients whose skin refused to tolerate the combined insults of subcutaneous infiltration, poisoning of the same skin by impregnation with mercury dye, then cutting holes into the skin around the periphery of the field and finally separation of the skin from its underlying structure. If you think about it, there is really nothing left to torture that skin, except perhaps put it through a meat grinder. . . .

Incidentally, strict control of perianal moisture and routine use of hydrocortone ointment every 2nd or 3rd day for at least a year has reduced recurrences to about zero so far.

On account of the time restrictions of a panel discussion many important phases of office practice have to be omitted.

For many of us, office proctology or

ambulatory proctology covers all or most of our proctological activities. Excepting major resections there is very little rectal pathology that a well-staffed office under experienced direction cannot handle.

Local situations, your ambitions and experience, and the extent of your facilities, will determine your choice of what to do and where.

This presentation confined itself to the general outline of a therapeutic approach which promises excellent results under conditions which can be made available in every medical office.

CHAIRMAN PORTES: Thank you, Dr. Lahvis.

The next paper is a very important one, and we have the pleasure of hearing from Dr. Manuel Spiesman of Chicago who will talk to you on Fissure-in-Ano. Dr. Spiesman.

Fissure Pentad and Pectenosis

MANUEL G. SPIESMAN, M.D.*
LOUIS MALOW, M.D.
Chicago, Illinois

After 27 years of an exclusive proctologic practice one learns by trial and error how to properly diagnose, treat and operate on anal fissure cases. One learns which cases to operate and which to treat; one learns when surgery is indicated and what pathology is involved in an operation of this kind.

I wish to state at the onset, that two of the most important factors in the treatment of fissure, are first, an understanding of the five conditions which comprise the average fissure, which we have named "The Fissure Pentad". Secondly a thorough knowledge of *one* of the most important of the five pathological entities involved in a fissure, namely; "Pectenosis", and the operation for its relief, "Pectenotomy".

Fissure in ano is a single traumatic crack or split of the anal canal, usually associated with a hypertrophied skin tag at its distal end, known as a "sentinel pile". When the anus is distended during proctoscopic examination, the fissure is then seen in its true light, namely, that of an ulcer from which it derives its second name.

Most fissures are located in the mid-posterior quadrant. The second most frequent site is the midanterior quadrant. In males approximately 90 per

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cent occur posteriorly. In females 60 per cent are posterior. Occasionally they may be found in the lateral walls.

Fissures are divided on the basis of their duration into an acute and a chronic type. There may or may not be a sentinel pile present. However, the sentinel pile occurs most frequently in the chronic type.

The external spincter arises partially from the coccyx and sends its fibers downward and anteriorly to insert in the central tendon of the perineum. These fibers separate at the posterior aspect of the anus and unite anteriorly. Other fibers encircle the anus. Because of this arrangement, a triangular space is created posteriorly (Minor's triangle) and a smaller triangle anteriorly. The anal mucosa overlying these triangles is not as well supported as elsewhere. Other important points are the poor blood supply of the anus, the congenital narrowing of the anal canal, and the concavity of the sacrum which makes the curvatures of the rectum and the anal canal receive the greatest force at the posterior commissure during expulsion of the stool.

Fissures are usually caused by trauma following a large constipated stool, passage of a foreign body, instrumentation, straining, sneezing or coughing.

Fissures usually start with a chronic cryptitis. The discharge from the crypts cause a papillitis. The cryptitis and the papillitis produce a passive congestion resulting in the formation of a fibrous connective tissue band. This band prevents normal relaxation of the anal spincters. This, occurring in conjunction with a frequently existing friable crypt in the posterior quadrant, plus the congenital weakness of this area (Minor's triangle) and the poorly nourished modified anal skin, precipitates a crack or split of the mucosa (fissure), when trauma occurs.

At first the fissure is superficial and not indurated. If not properly treated, secondary infection and further trauma cause the laying down of more fibrous connective tissue around the fissure, with a consequent thickening of the pecten band. This stage is now known as the irritable chronic fissure or ulcer. At the distal end of the fissure a hypertrophy of the skin results in the formation of a skin tag known as a sentinel pile, completing the five conditions making up the "fissure pentad". Extension of the infection from a fissure and its associated crypt occasionally results in an anorectal abscess and fistula, with severe lancinating pain. This usually occurs at the time of defecation, which gradually subsides over a period of from minutes to hours.

Bleeding is usually small in amount, streaking the toilet paper and stools. Occasional pruritis may occur because of the discharge previously mentioned. Constipation or obstipation is the rule in longstanding cases because of the associated pain and anal narrowing.

Home Treatment:

1. Mineral oil, one-half ounce twice a day.
2. Bland diet. (no raw vegetables and no raw fruit)
3. Sitz baths morning and night.
4. Rectal ointments applied with pile pipe, inserted before and after bowel movements, and upon retiring.
5. Aspirin or aspirin and codeine to relieve pain.

Office Treatment:

1. Local application of 50% phe-

nol in oil, to fissure, three times a week.

2. If this does not relieve the condition in a few days, then 1 cc. Nupercaine in oil (Ciba) is distributed under the fissure, into the muscle around the fissure, and about the lesser spincterian nerve between the coccyx and the anal verge.

The following surgical treatment is, in the author's opinion, the *only* satisfactory treatment for chronic fissure.

The complete surgical treatment of fissure should include the removal of the underlying and associated pathology (the fissure pentad). No divulsion is done, because the writer considers tearing of the pecten band unsurgical and usually results in more tightness (more pectenosis) than that which existed before the operation.

With the aid of a bivalve speculum the fissure area is exposed. A crypt hook is placed into the associated underlying crypt and the crypt excised. The grayish white fibers of the pecten band can now be easily discerned lying at the base of the fissure. A knife is then applied incising the pecten band through the middle of the fissure down to the fascia covering the subcutaneous external spincter. This is recognized by the smoothness and softness of the tissue compared to the circular indurated fibers of the pecten band. Frequently a few mahogany-colored fibers of the external spincter are incised along with the pecten band. The hypertrophied papillae adjoining the proximal part of the crypt are now excised. This is followed by the removal of the lateral sides of the fissure from the pectinate line to the anal verge. Considerable bleeding usually follows and is controlled with an electrocoagulating ball point. Now the sentinel pile is widely excised, allowing a large enough raw surface to permit drainage of the fissure while healing. Any other existing pathology can be removed during the same operation.

In conclusion, I again wish to emphasize the importance of an understanding of the "fissure pentad" and the operation "pectenotomy" for the relief of the most important of the five entities which usually comprise a fisure in ano, namely, "pectenosis" or "pecten band".

CHAIRMAN PORTES: Thank you, Dr. Spiesman.

The next panelist has quite a subject. Dr. George Shropshear, of Chicago, will discuss Anorectal Abscess and Fistula.

Anorectal Abscess and Fistula

GEORGE SHROPSHEAR, M.D.
Chicago, Illinois

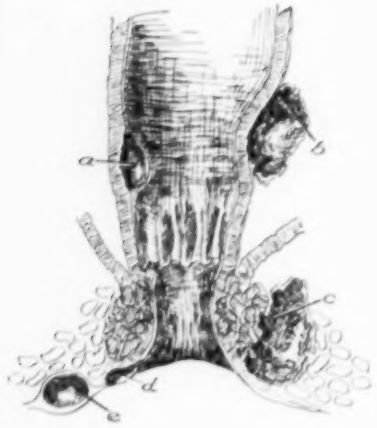
The most common cause of anorectal suppuration is infection of the anal glands and ducts. The anal ducts usually empty into the crypts of Morgagni and are subject to contamination and infection from the anal canal, resulting in cryptitis, papillitis, and anorectal abscess and fistula.

The course of development of an anorectal fistula may be divided into four stages, abscess formation constituting the third stage. The first stage is that of injury to or contamination of the anal crypts. The second stage is characterized by infection of the anal ducts and glands, with burrowing of the inflammatory process along the fibroelastic septate terminations of the longitudinal muscle coat of the rectum which honey-comb the perianal tissues. There may be an associated submucous extension of this process. With localization of the inflammatory process and abscess formation the third stage begins. When the abscess points and ruptures spontaneously, or is incised and drained, the fourth or final stage is reached with the development of an anorectal fistula.

Anorectal fistulae must be differentiated from those caused by hidradenitis suppurativa, arising from infection of the aprocrine glands. An infected pilonidal sinus may give rise to extensive perianal and ischiorectal suppuration with multiple sinus formation. While the suppurative process in the majority of cases is the result of a mixed, nonspecific infection, it must be borne in mind that tuberculosis, actinomycosis, and lymphogranuloma venereum may constitute the etiologic background for anorectal abscess and fistula.

Treatment of Anorectal Abscess and Fistula

In recent years many proctologists and surgeons have insisted that wide removal of the overlying skin of an ischiorectal or perianal abscess, the so-called unroofing operation, will do much to prevent the development of a fistula. To my mind, this is wishful thinking, based on a misconception of the underlying pathology. Since incision and drainage is not a definitive operation, all that needs to be done is to evacuate the abscess of its purulent contents through an adequate incision with one or two relieving cuts along its margins to provide for adequate drainage, followed by loose packing of the cavity with iodoform gauze. In general, the more acute the process the less should be done in excess of incision and drainage. It is then advisable to delay fistulectomy until the abscess cavity has contracted in size, leaving a



Various possible locations of perianal and perirectal abscesses.

a. submucous (intramural) abscess.

b. high-level supralevator (pelvirectal) abscess.

c. ischiorectal (ischioanal) abscess.

d. cutaneous abscess.

e. subcutaneous abscess.

chronic, fibrosed fistulous tract.

Since anorectal fistulae burrow through the perianal tissues in an irregular and unpredictable fashion, the course of the tracts must be determined by the surgeon in relation to the anal musculature. For practical purposes, the muscular cylinder surrounding the anal canal may be divided into: (1) the subcutaneous external sphincter; and (2) the anorectal ring. The anorectal ring is a composite structure, discernible by palpation, and consisting of the internal sphincter, the downward prolongations of the longitudinal muscle of the rectum, the puborectalis division of the levator ani attached to the superficial part of the external sphincter, and the deep portion of the external sphincter muscle. With complete severance of the anorectal ring loss of continence will result, whereas when even the narrowest complete ring of muscle remains control is preserved. The subcutaneous external sphincter muscle may be divided in any manner without causing loss of control.

Classification of Anorectal Fistulae

1. SUBSPHINCTERIC ANORECTAL FISTULAE:
   These include submucous and subcutaneous fistulae which are superficial to all the sphincter muscles.
2. INTERSPHINCTERIC ANORECTAL FISTULAE:
   a. Superficial Intersphincteric Fistulae with tracts passing along the anal intermuscular septum between the subcutaneous external sphincter and the internal sphincter.
   b. Deep Intersphincteric Fistulae with tracts burrowing through the anorectal ring at various levels, usually in the posterior segment.

With this simplified classification of anorectal fistulae in mind, the surgeon must identify the course of the fistula in the perianal tissues under anesthesia. While many surgeons and proctologists make use of the injection of methylene blue solution or bismuth paste into the external sinus to determine the course of the fistula, I find these adjuncts unnecessary to distinguish the fistulous tract from the surrounding tissue. The purplish-gray granulations of the fistulous wall are characteristic and easily distinguishable from the normal tissue.

The cure of anorectal fistula consists mainly in converting the fistulous tunnel into an open ditch by sharp dissection from the internal opening to the external opening, or vice versa. While there is usually only one primary internal opening in the region of the anal crypts, occasionally a secondary internal opening may be encountered at a higher level above the pectinate line. There may be one or more external openings located in the perianal region or the ischiorectal fossa. If the relationship of the tract to the anorectal ring cannot be definitely established, it may be wise to elect to do a two-stage operation. Whenever possible, a fistulectomy rather than a fistulotomy should be carried out. Routine pathological examination of the tissues removed is advisable to determine the possibility of specific infections, especially tuberculosis, or complicating malignant disease.

Summary

A brief discussion of the pathogenesis of anorectal abscess and fistula has been presented. A simplified classification of anorectal fistulae based on anatomical considerations is offered as a guide to treatment. While primary closure may represent a praiseworthy attempt to improve the technique of dealing with anorectal fistula, this method is not discussed since it appears to be an ill-advised procedure because of the high long-term recurrence rate. Fistulae with tracts above the anorectal ring do not come within the scope of this discussion, since they are characterized by an internal opening into the rectum above the anorectal junction. These are rectal fistulae as distinguished from the anorectal variety. Their treatment involves more complicated anatomical considerations.

CHAIRMAN PORTES: Thank you, Dr. Shropshear.

Dr. Leonard Kowalski of Chicago will present the subject of Dr. Max Sadove, "Latest Developments in Anesthetic Agents".

Latest Developments in Anesthetic Agents

Presented by Dr. Leonard Kowalski, Chicago, Ill.

MAX S. SADOVE, M.D.*
Chicago, Illinois

As Dr. Caesar Portes mentioned earlier this afternoon, these are not exactly new things that we have here, and so, as a result, we decided to present three agents, one an infiltrative agent, another a general anesthetic agent, and the third a topical anesthetic

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agent. We don't intend to completely go through everything about these anesthetic agents, but we figured it might be a good idea to inform our audience about some of the things that we should be careful in using. The first is lidocaine, the trade name being Xylocaine, ("xy" instead of "zy"). It is a potent local anesthetic as used for local infiltration or regional anesthesia. The action it produces is more prompt and more intense than an equal concentration of procaine, (Novocain), and a concentration of 0.5 per cent in toxicity is the same as procaine hydrochloride. However, with an increased concentration the toxicity exceeds that of procaine, whereas when you reach a one per cent concentration there is about a 40 per cent greater toxicity than Novocain. When we go to a two per cent concentration the actual Xylocaine toxicity is increased by 50 per cent in comparison with Novocain.

The side effects are rare in the lower concentrations. However, since the central nervous system stimulation is increased by higher concentrations, a total dosage of 500 mg. of lidocaine (Xylocaine) should be used with caution. It is felt that the total dosage should not exceed 300 to 350 mg. in an adult, with the 0.5 per cent concentration, which gives excellent results. One and one-half per cent is not necessary even for a regional block anesthesia.

The next agent we have in mind is a general anesthetic agent which has been mentioned earlier by Dr. Lahvis. Trichloroethylene is known by its trade name, "Trimar or Trilene". It is a potent analgesic agent and is an excellent light anesthesia not exceeding the first plane. Induction is pleasant and comparatively rapid. It is non-inflammable and can be used in the presence of cautery. Recovery from this anesthetic agent is rapid since it is a light anesthesia, and can be administered by syringe as well as the Duke inhaler, the two of which are similar. This device is used for self-administration, and in most cases it is a very good method of administering the agent. However, it is not without danger. By that I mean the self-administration.

It can be used in conjunction with nitrous oxide and oxygen as a general anesthetic. We still maintain that oxygen should be given because increased irritability of the myocardium and cardiac arrhythmias may result. It should not be used in a closed system which permits rebreathing because it is unstable, alkaline absorption producing dichlorodiethyl or phosgene, which can produce pulmonary edema. As I mentioned before, it produces a little akinesia, and may produce bradycardia; arrhythmias and tachypnea may result.

Moving on to the topical anesthetics, we thought that merocaine might be a good agent to mention. It is a 20-benzocaine preparation and has a long analgesic action and low toxicity. That is about all we have to present at this time.

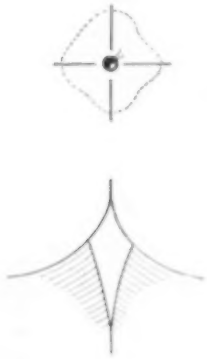
CHAIRMAN PORTES: Thank you, Dr. Kowalski.

Our next panelist, Dr. Cantor, of Flushing, N.Y., whom you all know as our Secretary, is going to discuss pilonidal diseases.

Pilonidal Cysts

ALFRED J. CANTOR, M.D.*
Flushing, New York

We need not discuss etiology or classification other than to say that these lesions are congenital in origin and include pilonidal dimple, pilonidal sinus, pilonidal cyst, pilonidal cyst connecting with the sacral canal, and pilonidal cyst connecting with the sacral canal and communicating with the subarachnoid space or the central canal of the spinal cord.



Cruciate incision technic for pilonidal cyst: Antero-posterior and lateral incisions determine the dimensions of the cyst.

The largest percentage of permanent cure appears to result from complete excision without closure. Certainly primary suture is never indicated in the presence of inflammatory change.

The major requirements for successful primary closure are: 1. complete excision; 2. absence of inflammation; 3. complete obliteration of dead space; 4. perfect hemostasis; 5. absence of tension on the suture line.

The cruciate incision technique is merely a method for outlining the exact dimensions of the cyst, and reducing the extent of excision of normal tissue

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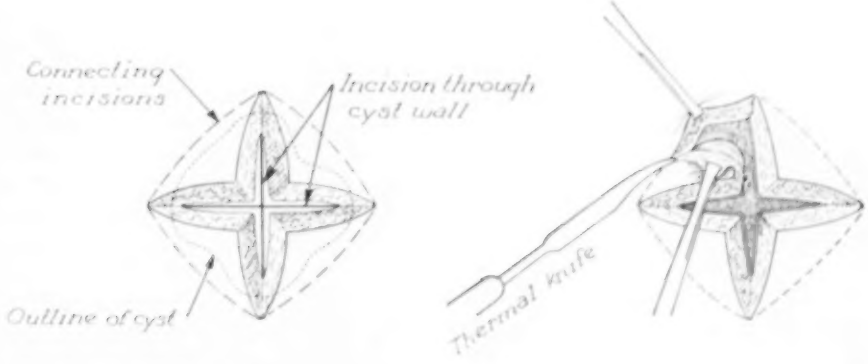

surrounding the cyst area. The marsupialization procedure utilizes the cyst membrane and scar tissue to reduce the healing time.

The incidence of recurrence after excision and primary closure is high. Although the period of convalescence is prolonged when the wound is allowed to remain open, this technique offers the highest percentage of permanent cure.

The technique of partial closure has been suggested in the attempt to reduce the healing time. Number 32 alloy steel wire is used for such closure, placing the sutures about one-half inch apart through both subcutaneous tissue and fat and mid-line fascia. All sutures are in place before tying, and the ends are cut directly above the knot, leaving the skin open about three-eighths of an inch (Bacon). However, in eighty-four consecutive cases, eleven broke down once, five broke down twice, and two broke down three times.

We must conclude, after examining all statistics, that the open method offers the best results.

CHAIRMAN PORTES: Thank you, Dr. Cantor.

Dr. Louis Goldman will read the paper prepared by Dr. William Lieberman of Brooklyn, N. Y., entitled "Local Anesthesia in Proctology."

Local Anesthesia in Proctology

WILLIAM LIEBERMAN, M.D.*
Brooklyn, New York

Local anesthesia should be employed in proctologic procedures with much greater frequency than either spinal or general anesthesia. Local anesthesia can be used in almost all ano-rectal operations, including those for hemorrhoids, fissure, papillitis and cryptitis, most fistulae, pilonidal cysts, strictures, benign neoplasms, and incision and drainage of rectal abscesses.

For many of these operations spinal anesthesia recently has been employed far too frequently, adding the risks of a major anesthesia to a (surgically) minor operation. It is accepted that anesthetic agents injected into the subarachnoid space may cause meningeal irritation as shown by pleocytosis and increase of protein in the spinal fluid[1] and also may damage nerve tissue.[2] According to Light[3] and co-workers, there is probably "in every case some toxic reaction produced in nervous tissue by the agents used in spinal anesthesia. . ." It also should be noted that the neurological damage caused by

* Proctologist, Unity Hospital, Brooklyn.

spinal anesthesia may be severe and apparently permanent.[4]

An increase in the number of sudden heart stoppages on the operating table has been noted by J. William Hintou, who based his conclusion on 1344 cases. One of the causes suggested for this increase is the greater use of anesthetic drugs in combination. Anesthesia was found to be responsible for many maternal deaths associated with pregnancy and labor (Klein, et al. *N. Y. State J. M.*, Dec. 1, 1953). This author reports deaths due to cardiac arrest (by gas-oxygen-ether), nitrous oxide asphyxia, massive pulmonary collapse, and, from spinal anesthesia, 11 deaths of which 9 were from "spinal shock" or sudden respiratory embarrassment and circulatory collapse.

In inhalation anesthesia there is danger of the patient dying on the operating table from aspiration of vomitus since it is difficult to tell with certainty whether or not the stomach is empty. (Editorial, Frank Cole, *Current Medical Digest*).

The danger of Pentothal, particularly with the large doses required in heavy individuals and the deep anesthesia needed to give sphincter relaxation, is well known. Respiratory depression is a constant danger. A preliminary opiate facilitates induction but depresses the cerebral cortex as well as the hypothalamus and acts as a respiratory depressant. Post-operative sedation must be postponed until respiration is normal and the patient conscious.

The already present risks of general anesthesia are greatly increased in obesity, recent ingestion of food or drink, anemia, orthopnea, alcoholics, presence of large abdominal masses, shock, thyrotoxicosis, suppurative disease of lungs, increased intracranial pressure, patients in unusual positions (such as prone), chronic obstruction with vomiting, heart disease, hemorrhagic tendency, emphysema.

Some of the complications during spinal anesthesia are: excess fall in blood pressure, nausea and vomiting, depressed breathing and restlessness. Spinal anesthesia is contra-indicated in disease of the central nervous system, severe hemorrhage or anemia, shock, cardiac decompensation if more than moderate, coronary disease, and in many cases where the patient expresses a fear of the sequelae.

All these facts lead to the conclusion that spinal and general anesthesia should be considered seriously as a major procedure with the ever-present possibility of complications or emergencies. Even with the greatest care possible, and with utmost confidence in the technic of spinal puncture, there is still the possibility of neck pain, back pain, leg pain and annoying headache; annoying, we should add, to the surgeon; to the patient it may be agonizing, disabling and completely demoralizing, lengthening his disability after hemorrhoidectomy to weeks instead of days. A small-gauge needle may result in a decreased incidence, but headache is still too frequent, and rectal cases are predisposed, more than any other type of patient, to headache, due to their very early postoperative ambulation.

For all the above reasons, a strong plea is here made for the almost exclusive use of local anesthesia in anal and perianal surgery. The possible objection of occasional patient hypersensitivity or nervousness has been overruled, in the author's practice, by the use of preoperative morphine, gr. 1/6 to 1/4,

and scopolamine, gr. 1/200 to 1/150, according to weight. Pre-operative assurance that spinal will *not* be used has often acted as the best pacifier of the apprehensive patient.

The technics of local anesthesia in ano-rectal surgery are too well known and easily available in the standard texts to require detailed description here. I favor the use of a 1% solution of procaine, usually requiring from 12 to 25 c.c. for complete anal anesthesia and sphincter relaxation suitable for hemorrhoidectomy or other procedure. Epinephrine may be added, only if the patient is not hypertensive or arteriosclerotic, if oozing is expected in excess or is particularly undesirable in the procedure, or if longer duration of anesthesia is desired. For consistently good anesthesia, it should be ascertained that the drug supplied is the correct one in correct concentration and properly prepared. The complete injection is given, if possible, through only two punctures, one on each side of the anus, with fanwise administration in the sphincters, submucous and subcutaneous tissues, starting with a sharp 25 gauge hypo needle and changing to a 22 gauge, 2 or 2½ inch, needle.

I do not use long-lasting anesthesia (such as anesthesia-in-oil) routinely, but only when excessive pain is expected due to the nature of the procedure or in cases of excessive spasticity and hypersensitivity. In the latter cases, a partial incision of the external sphincter fibers will prevent spasticity, decrease pain and speed healing.

In fistula, after the tract is probed, the anesthetic can be injected parallel to the tracts, with more difficulty if they are multiple or complicated in arrangement. In peri-rectal or ischio-rectal abscess, a T-shaped wheal can be raised by injecting superficially in the skin directly overlying. The subsequent insertion of a finger in the abscess cavity to break up pockets may cause some pain but this should be a very rapid procedure. Indeed, too much manipulation within the abscess cavity is contra-indicated in acute infection.

Conclusions

1. Local infiltration with a dilute solution of procaine is the safest method and agent with which to produce anesthesia.
2. Spinal and general anesthesias add the dangers of numerous complications and emergencies to the surgical procedure.
3. Most proctologic procedures can be performed satisfactorily under local anesthesia.

CHAIRMAN PORTES: Thank you, Dr. Goldman.

The next speaker is Dr. Harry Gussin who will talk on "Hemorrhoidal Disease."

Hemorrhoidal Disease

HARRY A. GUSSIN, M.D.*
Chicago, Illinois

You are all acquainted with hemorrhoids in your daily practice. Many of you know more about it than I do, so I hope to benefit by the discussion. A great deal of progress has been made in the field of hemorrhoidal diseases within the last twenty-five or thirty years. I do not remember having seen an anoscope during my internship twenty-seven years ago. It was seldom that a sigmoidoscopic examination was made. Even a well recognized doctor made a digital examination and told the patient he had no hemorrhoids. The only way a doctor saw a hemorrhoid was if it was protruding from the anus and shaking hands with him. I remember doctors pushing external hemorrhoids into the rectum, but they could not make them stay there. They didn't even give a thought to the sphincter. Conditions now have changed a very great deal. Anoscopic and sigmoidoscopic examinations are done by all proctologists for hemorrhoids, which are the most common disease of the ano-rectal region. Hemorrhoids are tumorous swellings produced by pathology of the veins of the rectum accompanied by infiltration of the surrounding tissues. The result is varicose veins, sometimes accompanied by thrombosis.

There are external and internal hemorrhoids, and external-internal, or a combination of the two. As you know, the external group could be described as a collection of small varicose veins outside the anus. Internal hemorrhoids have their origin about the ano-rectal line. They are irregular in outline, reddish in color, and they are caused by varicosities of the superior hemorrhoidal plexus. They are internal, may bleed profusely, and produce a feeling of fullness in the rectum as in constipation. In fact, this may be the patient's major complaint.

He may have flatulence, anorexia and irritation in this area. Pain may be referred to the back, hip, or legs, and even mental depressions have been noted. The etiology is lack of valve function in the rectal veins, causing the blood to press on the lower rectum and anus. Anything that will cause increase of pressure on the vein wall will cause dilatation and enlargement.

Some patients have suffered from constipation or diarrhea. This is particularly true in men who have to be on their feet continuously like farmers, mailmen and railroad men. Traveling men are subject to hemorrhoids. Women may suffer from hemorrhoids due to pregnancy.

In treatment we offer surgical ex-

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cision, injection and electrotherapy. In injection we use a sclerotic agent to cause fibrosis of the hemorrhoid. Phenol in oil and five per cent quinoxin are the most commonly used. There is very little involvement if treatment is done properly, and not too much of the solution is placed in the submucosal tissue. The higher the better since it stops bleeding, and pulls in the redundant mucosa. If there is a recurrence within six months or sooner, as is usually true in very large internal hemorrhoids, surgery is the only cure.

In a large external hemorrhoid surgery is the only cure. Only in cases with a small amount of bleeding or with contraindications to surgery should injections be given. As to electrotherapy, I have never tried it and don't know much about it.

As for surgical methods, we have the excision and suture operation known as Buie's method, the ligature operation which is a combination of ligature and excision, clamp and cautery, and various modifications of these.

CHAIRMAN PORTES: Thank you very much, Dr. Gussin.
And now for the questions —

Discussion

Number one, Dr. Evans wants to know the present status of Tubadil as a conjunct to the anesthetic. Dr. Kowalski, will you take that question?

DR. LEONARD KOWALSKI (Chicago, Ill.): The answer is that Tubadil is a good adjunct to anesthesia and can be used in rectal surgery. It is usually given two hours before the operation, and slow release of the Tubocurarine will provide adequate relaxation even in abdominal procedures. It is a good agent, and one known as a repository agent which is released gradually, and if given about two hours prior to surgery it is a good muscular relaxant.

Here is one for Dr. Gussin. How do you control post-operative pain after hemorrhoidectomy? Do you recommend use of infiltration of Effocaine or other long acting agents?

DR. HARRY GUSSIN (Chicago, Ill.): My experience has been with the type of anesthesia that Dr. Lahvis has been telling you about. I have seldom had any complications from this. Of course, in a hospital procedure an oil anesthesia would be advised. The only trick about using this anesthesia is not to get infections. Do not puncture the rectum when injecting oil anesthesia. Inject it lateral to instead of toward the rectum, so the point of the needle doesn't touch the rectum, and withdraw towards the muscle.

Dr. Cantor, do you ever inject pilonidal tracts with a dye such as methylene blue before excision?

DR. ALFRED J. CANTOR (Flushing, N. Y.): No, I do not find it necessary to do that. Usually in a pilonidal cyst the fistulous tract tissue will be

very evident on gross examination without the use of methylene blue dye. Once you have incised the cyst, it is simply a matter of examining its walls for the granulation tissue tufts of subsidiary openings. If there is a connecting tract, you must put your probe into that tract and excise it.

That is a very good question, and it is important to realize that there can be such tracts. They always must be excised completely, otherwise they may be a source of recurrence.

CHAIRMAN PORTES: Dr. Spiesman, how would you suggest treatment of fissures in infants and children?

DR. MANUEL G. SPIESMAN (Chicago, Ill.): In infants and children I make it a practice to do a divulsion. I do divulsions in infants and children, especially under the age of six, and the results are very, very good. Divulsions are done once or twice at week intervals and the patients are advised to take mineral oil nightly for an indefinite period. This will cure practically all infants of fissures.

CHAIRMAN PORTES: Dr. Lahvis, would you use Trilene with patients in the prone position?

DR. PAUL LAHVIS (Gowanda, N. Y.): Yes, I would. I consider Trilene very, very safe. I do not think that any one position is a contraindication against it as long as your patient is able to hold it. You may be familiar with this particular little gadget or instrument which is being used. You feed the trilene into the bottom and the patient inhales it. It is attached to the wrist of the patient, and if the patient gets to the point of not being able to hold it, you know he is at the point of analgesia where you do your work. Immediately upon regaining consciousness, you can judge where sensation is, and readminister it. Within those limitations, this is an unusually pleasant type of anesthesia for your office.

It is not entirely new, but it seems to me that it has been used sufficiently so that we know it will increase your analgesia scope because it is patient-administered. If the patient loses it or drops it when he loses consciousness, he immediately begins to use it again when the sensorium returns.

CHAIRMAN PORTES: Does that answer your question?

Dr. Shropshear, if in doing an abscess opening an obvious, large internal opening is noted, why not do a fistulectomy supported by antibiotics?

DR. GEORGE SHROPSHEAR (Chicago, Ill.): That is a good question. There has been a lot of discussion about it. There is no objection, as I see it, to opening the abscess into the internal opening when it is present, if it is superficial in location. By internal location I mean high within the anorectal ring. If it is here it isn't wise to open it. One reason why I object to completing the operation at one sitting is that these abscesses are acute inflammatory processes, and you may get a liver abscess as a result of injudicious surgery.

Simply opening the abscess and letting it drain and letting the cavity fill in again is not the answer. I see no answer why it can't be done if the opening is low. As far as the use of antibiotics is concerned, I don't believe in the injudicious use of antibiotics. When the physician feels there is a great deal of infection, I

would say use them when indicated, in short courses. But in general I would say not to use them, because if you will agree with me that opening an abscess is not a definitive procedure, if you leave the patient alone he will heal up anyway.

If it doesn't heal and if there is no other choice than to use the antibiotics, then I'd say use them. I think that penicillin and streptomycin in this location seem to be the best. However, the use of the sulfa drugs cannot be completely forgotten. I have found sulfadiazine extremely helpful in these cases.

CHAIRMAN PORTES: This one is for Dr. Kowalski. What is the present status of Efocaine?

DR. LEONARD KOWALSKI: Presently the use of Efocaine is on the downgrade.

CHAIRMAN PORTES: Does anybody else want to say anything about that? If not, we have a question here for Dr. Cantor. Do you use the cruciate incision technique most of the time?

DR. ALFRED J. CANTOR: Yes, I do.

CHAIRMAN PORTES: Dr. Cantor again. Can the rectal sphincter be cut deliberately without ill effects?

DR. ALFRED J. CANTOR: I think, perhaps, this should be directed to Dr. Shropshear since it would be in line with his presentation.

CHAIRMAN PORTES: It also says some surgeons do this routinely in hemorrhoidectomy.

DR. GEORGE SHROPSHEAR: In doing a hemorrhoidectomy sometimes they do, but I feel that if you do cautious surgery it isn't necessary. The external sphincter muscle should be protected at the time of hemorrhoidectomy.

CHAIRMAN PORTES: This one is directed to Dr. Spiesman. Would you do a sphincterotomy anteriorly in a female for the treatment of anterior anal ulcer as compared to posterior sphincterotomy?

DR. MANUEL G. SPIESMAN: I never do a sphincterotomy for a fissure-in-ano. I don't feel that it is necessary. For many years we took sections of the anal canal from the mucosa down to the muscularis to see if the sphincter were involved in the pectenosis, and not once in any specimen did we see any fibrous involvement. The pecten band stopped at the sphincter muscle, and, therefore, we feel now that it is unnecessary to cut the sphincter muscle and we get good results by not cutting it. We just cut the mucosa and make a cut in the pectenate fascia which lies over the muscle. As far as we can tell, when you do that you will find the entire sphincter area will relax. We do not do a sphincterotomy.

CHAIRMAN PORTES: Is there more discussion? If not, there is another one here which is also directed to Dr. Cantor. In sphincterotomy is it not the sphincter muscle that is being cut instead of the pecten band?

DR. ALFRED J. CANTOR: I will be glad to discuss briefly the question of cutting the sphincter. The sphincter mechanism can be cut without any concern in certain locations if the pack that is placed between the cut ends of the sphincter muscle is removed within

twenty-four hours after surgery. The danger is in leaving the packing between the cut ends for too long a period. It should not be for more than twenty-four hours, because there is too much retraction and too heavy scar tissue, with resulting impairment of sphincter function.

You may cut the external sphincter at more than one location. I have often cut it in two locations at the same time, when operating for multiple fistulae, and have no fear of so doing. Again, the thing to remember is the removal of the packing material from between the cut ends of the sphincter within twenty-four hours after surgery.

The internal sphincter should be handled differently. It is best to cut only in one location unless this is impossible, and a seton marker can be placed to indicate the second area of surgery.

If the sphincter is to be cut twice, and if you use a seton marker, you will readily find the second internal opening and be able to do a second stage sphincterotomy at a later date without any danger of sphincter incompetency.

On the question of sphincterotomy or pectenotomy I am anxious to say something about that. Except in a few instances the pecten band will almost invariably be found to stop at the sphincter, as Dr. Spiesman pointed out. This is worthy of emphasis. So, in most cases it is totally unnecessary to do a sphincterotomy at the same time that a pectenotomy (overlying the sphincter) is performed.

CHAIRMAN PORTES: We have several questions for Dr. Spiesman. Do you believe that posterior sphincterotomy satisfies the criterion of adequate operation for completing the operation or do you insist that the pecten band only be cut? In your discussion of anal fissure you failed to mention posterior sphincterotomy in the treatment. Can you separate the pecten band anatomically from scarred sphincter muscle? Do you want to take all of them at once, Dr. Spiesman?

DR. MANUEL G. SPIESMAN: You can differentiate the pecten band from the sphincter muscle by the color and appearance. The pecten band has gray-white fibers running transversely from about the pectenate or Hilton's line. When you cut through that band you see the fascial layer, a very small fascial part, and below that it doesn't make any difference because you have the fibers of the sphincter. The differential factor is that you do not have to cut the sphincter. There is nothing wrong according to the pathologists, with the sphincter, so it is not responsible for the trouble.

CHAIRMAN PORTES: Thank you. The next question is directed to Dr. Gussin. Do you treat hemorrhoids in pregnant women and what treatment do you use?

DR. HARRY A. GUSSIN: If a patient is pregnant and has internal hemorrhoids there is no contraindication to injection, but if it is a broad based hemorrhoid such as it very often is, I would also treat the patient without any surgery unless there is a great deal of pain connected with it. As far as internal hemorrhoids are concerned, there are no indications for doing any surgery. We treat them by injection and take care of them.

CHAIRMAN PORTES: The next question is for Dr. Cantor. Are there

disadvantages in the routine use of Diodrast to outline the pilonidal sinuses?

DR. ALFRED J. CANTOR: It is totally unnecessary.

CHAIRMAN PORTES: What is your treatment of acute pilonidal abscess? Do you advise uncapping widely?

DR. ALFRED J. CANTOR: My principal approach in acute pilonidal abscess is to incise and drain it widely. If the inflammatory process is localized, this is an adequate procedure. The complete excision procedure, when indicated in such cases, is entirely satisfactory, and there is little danger. I can assure you that the procedure of complete excision is indicated in a good many abscess cases.

However, if you have a widespread inflammatory process, rather than a localized abscess, it is by far better to simply incise and drain. After it subsides, you may perform your secondary excision in a smaller area.

CHAIRMAN PORTES: This one is for Dr. Shropshear. In uncomplicated fistulectomies do you ever repair the wound and the sphincter in order to promote faster healing?

DR. GEORGE SHROPSHEAR: I would answer that with a "no."

CHAIRMAN PORTES: No, and that is all. The next question is for Dr. Spiesman. Do you still use and advocate Pentothal anesthesia in your surgery?

DR. MANUEL G. SPIESMAN: We certainly do, and we get nothing but good results ever since we have been using it. I have been using Pentothal as part of the general anesthesia. Our patient receives three grains of Seconal the night before operation and then a hypo in the morning about an hour before surgery, consisting of 100 milligrams of Demerol and 1/150 mg. of scopolamine. He is sent to the operating room in a quiet condition. Then we talk to the patient and carry on a general conversation with him and insert the needle and give Pentothal, and in a very short while, and without any pain, the patient is asleep.

I use a local with this, and in about two minutes the anesthetist cuts down on the Pentothal. That is one reason I use the Pentothal because you are not hurting the patient when you use a local with the Pentothal. It reduces the amount of bleeding and prolongs the anesthesia after leaving the operating room.

I remember cases that received spinal anesthesia who were worn out from the pain. We feel that a grain of Pentothal and local work beautifully, and you can put them to sleep without their realizing it, and they awaken comfortably and remain comfortable for two hours or more after returning to their rooms.

CHAIRMAN PORTES: Dr. Kowalski, what do you consider the best and safest local prolonged anesthetic in rectal work to prevent postoperative pain?

DR. LEONARD KOWALSKI: The question is a long-acting agent to prevent postoperative pain? This is my feeling, in the hands of Dr. Gussin at Mount Sinai, I think this type of management is excellent. As far as we are concerned, we have not had good luck with the longer acting anesthetic agents, and we feel that possibly some oral salicylates with a barbiturate added, plus possibly a little codeine and a topical anesthetic, either the liquid or the

only type, work better than any individual local long-acting anesthetic.

CHAIRMAN PORTES: This question is for Dr. Gussin. When external-internal prolapsed massive hemorrhoids are present what precautions should be taken to rule out cirrhosis of the liver, liver disease, or various forms of heart disease?

DR. HARRY A. GUSSIN: The best suggestion is that you call in a medical man to check on the patient. You should always do that. It is also helpful in any disease below the beltline to get a urologist, internist, or a gynecologist. As far as taking care of the hemorrhoids is concerned, even the patient with liver disease will get along for a while. The only thing you can do with this patient is to wait and see what develops if there is no emergency.

CHAIRMAN PORTES: Dr. Cantor, what is the treatment of the pilonidal cyst that will not heal completely following radical operation without suturing?

DR. ALFRED J. CANTOR: Well, that is a rather difficult order. You must bear in mind that healing depends upon many factors. The patient's general condition is very important, and we have had cases with systemic disease of various types where the healing capacity of the patient was very inadequate. It is necessary in such cases to treat the systemic disease before the local wound will heal adequately.

Then, of course, there is the question of local treatment of the wound. We routinely use five per cent scarlet-red ointment. This is a very ancient remedy which should be revived. We have found it very helpful in stimulating healing of the pilonidal cyst. Also, the patient can use it at home. We find that it hastens the granulations in the average pilonidal cyst wound regardless of size, and we find they will heal in one to three months. Occasionally they will heal faster.

If fistulous tracts have been overlooked, naturally it will be necessary to find and excise them. If, with conscientious treatment, there is complete failure of healing, it would be necessary to reoperate such cases. Don't hesitate to reoperate if you find that the wound doesn't heal and you have ruled out systemic disease as the patient's source of difficulty. Don't feel that you are admitting failure. Some patients do not have the capacity to heal properly without secondary surgery.

CHAIRMAN PORTES: Thank you, sir. That was a long dissertation that should help. Here is a very important question which should be answered immediately. Dr. Kowalski, please identify the relationship of Xylocaine with Zylcaine and the difference in length of duration.

DR. LEONARD KOWALSKI: The difference is that Xylocaine about which I was speaking, is an aqueous solution. It is an entirely different preparation. Chemically it is lidocaine. That is why I tried to distinguish between lidocaine and Zylcaine. Now Zylcaine is a preparation which has a procaine base. It has a procaine base with some Butesin and benzyl alcohol, and peanut oil to make the required volume. Now, this is an oily solution, whereas the other is an aqueous solution. As far as the duration of action is concerned, the Zylcaine, the oily preparation, has a longer action. Xylocaine, the aqueous

preparation, has a shorter action, but this action can be prolonged by the addition of epinephrine solution. We suggest the use of 1:250,000-1:200,000 epinephrine concentration. We feel that if you give this concentration of adrenalin in the anesthetic it will give sufficiently prolonged vasoconstriction, and yet you will not get the side effects of epinephrine.

CHAIRMAN PORTES: This one is for Dr. Shropshear. Please discuss fibroplastic diathesis. This was mentioned in Nesselrod's recent book.

DR. GEORGE SHROPSHEAR: We have had a great deal of discussion of fibroplastic diathesis. The most recent was by Gibrow, Curtis, and Rosser, I imagine around 1931, in discussing the tendency of necrosis to develop in fibrous reaction. Rosser felt at the time that there was a tendency in the Negro to heal fully in fibroplastic diathesis. I don't think you will find that in white patients. You may see it in Negro patients. I must say I have never seen too much fibroplastic diathesis. I don't think it should be considered as a lymphogranuloma venereum.

CHAIRMAN PORTES: Thank you. Dr. Cantor, do you believe that the so-called "epithelial lining" of a pilonidal sinus is diseased tissue?

DR. ALFRED J. CANTOR: That calls for a discussion of the meaning of "diseased tissue." Let us say simply that the tissue in question is tissue which is abnormally placed. If you consider it as an inversion of the skin, you would imply that it would not be a disease process but a congenital, developmental process because when the skin is inverted there is no diseased tissue.

Then, of course, some of the answer lies in the phrasing of the question, and it isn't particularly clear whether the questioner had in mind the use of that tissue at the time of marsupialization. If so, that tissue should not be classified as diseased. If that is the questioner's intent, then I would say that you can leave that tissue safely, and it will form a perfectly adequate closure following the marsupialization procedure.

CHAIRMAN PORTES: Did you know that the Council of Pharmacy and Chemistry of the American Medical Association had refused to accept Trilene because of its inherent dangers?

DR. LEONARD KOWALSKI: It is true there are difficulties with the agent and have been in the past. However, it was found that the trouble was produced by the impurities, and consequently we have a purer agent right now which will do away with any of the previous complications. Yet there are certain people that are rather skeptical about these things. I feel that time will tell.

CHAIRMAN PORTES: Thank you very much. We still have a few minutes time yet, and we have several questions here, one very good one. Do you operate patients in stirrups or do you prefer the lateral prone position? Does anybody want to answer that?

DR. MANUEL G. SPIESMAN: When we were talking about these things with Dr. Shropshear just a few minutes ago, I said I operated in the lithotomy position. I learned that from Vernon David, one of my early teachers, and I think that it has an advan-

tage in that it is much easier to sit and operate with the patient in the lithotomy position than it is to stand and bend over for two, three, or four cases. It is also better for the patient to lie on his back than on his stomach for the doctor who is giving a general anesthesia. For the benefit of the patient as well as for the operator, I prefer the lithotomy position.

CHAIRMAN PORTES: Dr. Gussin? We will have to go very fast now.

DR. HARRY A. GUSSIN: Dr. Spiesman forgot to mention the intern who also gets a backache with the patient in the lithotomy position. As far as the intern is concerned, and also the patient, it is nicer to use the jack-knife position. It is better for the patient. I have talked with the patients afterward and they say it is better, and it is better for the doctor. Another point Dr. Spiesman forgot was that in the lithotomy position you always have contamination because there is always fecal matter coming down. In the jack-knife position the fecal stream has to come up and then come down.

DR. LEONARD KOWALSKI: As far as I am concerned my principal interest is in the patient himself. My next interest is in the surgeon, and finally I come last. It is true that the intern may get a broken back, as Dr. Gussin pointed out, but this is the way I feel about it. Supposing the patient is a very heavy-set individual. The lithotomy is a wonderful position, and yet you must watch for too much flexion of the thighs which may affect circulation and respiration adversely. If we use discretion in flexing the legs of the patient, the lithotomy is an excellent position.

The prone position is most cases is a very, very bad position, especially the jack-knife position. If you take certain precautions of elevating the hips and elevate the shoulders, the abdomen and chest are free to move without any compression, and you can carry the patient very well physiologically. True enough, we don't get the advantage of blood in the legs because the blood is stagnant and the flow is downward mostly, and it also has something to do with their being heavily sedated, and their respiration as well is impaired if you have the patient in the jack-knife position flat on his belly. The point that I previously mentioned is that you are asking for a lot of difficulty.

CHAIRMAN PORTES: It seems to me that the things Dr. Kowalski mentioned would not be as true under spinal as under general anesthesia.

DR. LEONARD KOWALSKI: Yes, it is more pronounced, but there is some difficulty even in a patient who is mildly sedated or in the one without any sedation at all in the anesthesia. Yes, the patient under local anesthesia would not be likely to have as much difficulty.

CHAIRMAN PORTES: But I would say this. I think we have to be able to operate on the patient in all positions, in the lithotomy, and in the prone position as well as in the lateral. Sometimes it depends on the condition that we have present, on what the pathology is, as to what type of anesthesia you are going to use. In other words, in hemorrhoidectomy the simple jack-knife position will do well, but if the surgery is a little more radical, the lithotomy position is the one that is indicated.

I'd like to have Dr. Cantor say some-

thing about this.

DR. ALFRED J. CANTOR: The only thing I can say is that it is a matter of the individual operator's preference for the most part, (aside from the consideration of the points brought out by Dr. Kowalski, which are excellent). Speaking for myself I use caudal anesthesia in the prone position practically routinely. In over 5,000 cases operated in the prone position with caudal anesthesia, the patients being ambulatory 45 minutes after surgery, there have been no complications. I think the patients like the position very much.

CHAIRMAN PORTES: Now we have a few more questions that we haven't answered. Dr. Shropshear, what is your surgical approach to a supralevator abscess?

DR. GEORGE SHROPSHEAR: The surgical approach to a supralevator abscess is a major procedure and should be carefully done under good anesthesia. The incision is made in the ischiorectal fossa, exposing the levator ani which is fixed with the finger in the rectum as a guide, with the operator using both hands. A slight incision is made, and then with the finger in place you go through the rectus muscle. I feel that the incision should be enlarged in a line with muscle fibers. Relieving the pressure can be accomplished by cuts in the fasciculata and in the muscle. However, most important is the fact that the knife should be inserted in several places, and that the skin area which is incised in the ischiorectal fossa, is considerably larger than the cavity.

CHAIRMAN PORTES: Thank you very much. We have a few other very pertinent questions. Here is one for Dr. Gussin. Do you use clamp and cautery in hemorrhoidectomy?

DR. HARRY A. GUSSIN: No, I don't use it.

CHAIRMAN PORTES: Thank you, sir. Here is one for Dr. Cantor. Please discuss briefly instillation of silver nitrate sticks in pilonidal disease.

DR. ALFRED J. CANTOR: I don't use it, and have had no experience with it.

CHAIRMAN PORTES: Thank you very much. This one is directed to Dr. Kowalski. Is there any possibility of using pudendal block in rectal surgery?

DR. LEONARD KOWALSKI: Yes, pudendal block can be used for rectal surgery, but we feel it would be just for a superficial procedure.

CHAIRMAN PORTES: Here we have a question from Dr. Cannon who says he has a diagnostic and therapeutic problem and that it will take him about three minutes to present the history.

DR. ED CANNON (Chicago, Ill.): Mr. Chairman. I won't use two minutes. I have enjoyed the discussion very much. I would like to say that I believe Dr. Shropshear's paper was the most brilliant one I have heard in the last six or seven years and was well worth coming back from California to hear.

Clinico-Pathological Conferences

New York University-Bellevue Medical Center Post Graduate Medical School, Department Of Medicine at Bellevue Hospital, Fourth Medical (N. Y. U.) Division

PATIENT R.W.

This 46-year-old colored male was admitted to Bellevue Hospital nine times.

1st Admission 1/18/48-2/2/48: His first admission was for a LUL lobar pneumonia, which responded well to penicillin. The past history was of significance in that he had gonorrhea in 1931 and a sore on his penis in 1930; the latter was treated with salve and 6 injections in the hip. In 1941 he had a six month course of I.V. therapy for lues. Physical examination revealed signs of a LUL pneumonia, and a heart 2cms. outside the MCL in the 6th interspace. B.P. = 160/100. There was an apical systolic thrust, a soft systolic blow at the apex and A2 = P2. LK and S were not palpable and there was a dorsal scar at the base of the penis. No report of blood Wass.; spinal fluid Wass. was negative.

2nd Admission 1/20/49-2/3/49: The patient entered complaining of left chest pain, cough, sweats, chills and fever and very slight hemoptysis. He was found to have a bronchopneumonia which responded well to penicillin. Heart signs were the same as the first admission. B.P. = 140/94. An aneurysm of the transverse and descending aorta was noted for the first time. No diastolic murmur. No tracheal tug. Mazzini 4+, Wass. 2+, VDRL pos. 1-5. Spinal fluid Wass. negative. There were no clinical signs or symptoms of cardiac failure. Venous pressure = 110 mms. H_2O. Circulation Time: A → T = 7 seconds, A → L = 4 seconds. The patient received 3.2 million units of penicillin during an 8 day period.

3rd Admission 4/12/49-4/28/49: Same complaints. Found to have a RML pneumonia and successfully treated with penicillin B.P. = 134/90. PMI was found to be in the 5th I.C.S., 1 cm. beyond the AAL. A2 > P2. No murmurs were heard. The aneurysm was again noted. Mazzini 4+, Wass. 4+, VDRL pos. 1-2.

4th Admission 11/21/49-12/13/49: The patient entered with a 14 hour story of sharp, non-radiating, precordial pain, not related to exertion, and with no

dyspnea or vomiting. An x-ray was taken in the admitting office which, of course, showed the aneurysm, and the patient was sent in to the ward. B.P. = 136/94. Serial EKG's did not bear out the suspicion of myocardial infarction, though "myocardial disease" could not be ruled out. The clinical cardiac signs were essentially the same as on the last admission. Venous pressure = 145 mms H_2O. Circulation Time was normal. Mazzini 4 +, Wass. 4 +, VDRL pos. 1-2.

5th Admission 3/21/50-4/17/50: He again entered complaining of the previously described precordial pain, this time of 48 hours duration. A tracheal tug was felt for the first time. The lungs were clear. The PMI was forceful and beyond the AAL in the 6th left I.C.S. A systolic murmur was heard over the entire precordium, and loudest at the 3rd-4th interspaces to the left of the sternum. A2 = P2. No diastolic murmur was audible. B.P. = 160/100. There was no evidence of myocardial infarction on E.K.G. The patient had been afebrile throughout this hospital stay.

6th Admission 5/9/50-5/18/50: A three day history of chills, fever, left pleuritic pain, and a cough productive of thick green sputum was responsible for this admission. The patient was found to have a bronchopneumonia, which responded well to penicillin therapy. The cardiac signs were unchanged except A2 > P2. B.P. 160/100. A tracheal tug was still present, but no diastolic murmur was heard. Mazzini 4 +, Wass. 4 +, VDRL pos. undiluted.

On 3/14/51, in Toledo, Ohio, the patient's aneurysm was wrapped with cellophane, following which he was discharged after an uneventful course.

7th Admission 5/30/51-6/9/51: The patient entered complaining of vague chest pain of 3 days duration—constant, of moderate intensity and aggravated by cough. B.P. = 142/80. Heart signs were the same as before. The pain disappeared after one or two days of bed rest (the patient had no home) and, after a week, he was discharged. There was no story of dyspnea, p.n.d., orthopnea or dependent edema. EKG changes were not specific but suggested some degree of myocardial damage.

8th Admission 10/22/51-10/29/51: Essentially the same story as on the last admission except no murmurs were heard and there was no longer a tracheal tug felt. EKG changes were not specific but suggested some degree of myocardial damage.

9th Admission 11/29/51-12/9/51: Apart from the usual intermittent precordial pain, he now complained of a dull-to-sharp pain in the region below the left breast, overlying his thoracotomy scar. It was aggrevated by deep breathing and was not constantly present. He still denied p.n.d and edema, but admitted to progressive dyspnea on exertion. No fever, chills, or hemoptysis.

Physical Examination: T: 99 P: 90 R: 18 B.P. 120/90. The patient was a well-developed, poorly nourished, middle-aged, Negro male, appearing neither acutely nor chronically ill.

There was a scar over the entire 6th rib on the left side. The right pupil was slightly larger than the left, though both reacted to light. Fundi were not remarkable. No adenopathy, E.N.T. essentially normal. The neck was negative. There was dullness over the left lung field with decreased breath sounds; otherwise clear to percussion and aus-

cultation. The PMI was forceful and easily visible in the 6th I.C.S. at the mid-axillary line. No murmurs were heard. A2 > P2, R.S.R. The liver edge was felt 2 F.B.'s below, firm, nodular and non-tender. The remainder of the physical examination was not remarkable. The spleen tip was questionably palpable.

Course in the Hospital: The patient gradually became confused, lethargic and poorly responsive over a period of days. One week after admission a large, firm, nodular mass was palpated in the epigastrium; whether or not this was incorporated in the liver could not be determined. The patient lapsed into coma and after a terminal liver biopsy, expired on 12/9/51. He had been afebrile throughout his course and did not complain of pain after the first day. Mazzini 3 +, Wass. 3 +, VDRL pos. undiluted.

Laboratory Data

Urines:

Date	Color	S. G.	pH	Alb.	Sug.	Acet.	Bile	Urob.	WBC	RBC	Other
1/20/49	yel.	1.019	7.0	tr.	0				8	rare	
4/12/49	yel.	1.027	acid	1+	0	0			rare		
11/28/49	amber	1.025	6.5	2+	0	0			2-3	rare	
3/21/50	straw	1.012	5.5	1+	0				1	0	
5/9/50	yel.	1.011	7.5	2+	0				8-10		
6/4/51	yel.	1.008	6.0	0	0				rare		
10/23/51	yel.	1.012	4.5	0	0	0			occ.		
10/25/51	yel.	1.010	7.0	0	0	0			10-12		
11/30/51	yel.	1.008	7.0	0	0	0					

Blood Chemistries:

Date	NPN	A/G	Chol/Esters	I. I.	CFT	Alk. Phosph.	P
1/21/49	30						
11/21/49	30	3.5/3.7	222/118	6	neg.	2.5	4.34
11/25/49		3.5/4.1					
10/24/51	30						
12/3/51		3.3/4.3	122/52	10	neg.	13.0	3.09

Blood Counts:

Date	Hgb.	RBC	WBC	Tr.	P	L	M	E	B	ESR	
1/20/49	12.8	4.99	9,600	1	73	19	4	3	—		adequate platelets
4/12/49	10.5	4.0	13,000		83	17	—	—	—		
4/27/49	12.2	3.9	11,700	2	64	29	2	3	—		
11/21/49	13.5	4.3	6,400	10	42	40	6	2	—	35	
12/2/49										10	
3/21/50	13.6		8,400	4	64	28		4			
5/9/50	13.0	4.2	10,800	12	77	9	1	1			
6/1/51	12.5	3.3	7,450	2	67	23	3	5			
10/23/51	12.5	4.09	12,200	16	52	32	—	—			
11/30/51	13.5	4.42	6,100	3	63	23	10	1			

Sputa: Pneumonias usually due to a pneumococcus.
Always negative for acid fast bacilli.

Sickling prep: 12/1/49: Negative.

Liver biopsy: 12/9/51.

Spinal Tap: 12/1/51 clear, colorless fluid with 10 lymphs/h.p.f. Protein 96, Wass. negative.

Stools for occult blood negative 11/21/49 and 12/3/51.

X-rays:

2/2/48: Pneumonic consolidation in the medial portion of the left upper lobe. Heart is in the transverse diameter.

1/21/49: No pneumonic consolidation. Heart enlarged in the transverse diameter. Aneurysmal dilatation of the supracardiac aorta.

4/13/49: Pneumonic consolidation in the right middle lobe. Transverse diameter of the heart is at the upper limits of normal. Aneurysmal dilatation of the base of the ascending aorta of the left extremity of the arch and of the lower thoracic aorta

3/22/50: Heart is not appreciably enlarged. Fusiform aneurysmal dilatation involving the descending arch of the aorta and the thoracic with calcific plaque in site. There are no pulmonary infiltrations. Thickened pleura at the left costophrenic sinus.

6/7/51: Heart enlarged in transverse diameter with widening of the supracardiac aorta. Thoracotomy in the middle of the left chest with a large area of increased density involving the left root and extending to the middle of the left lung.

11/30/51: Old thoracotomy in the left chest posteriorly with resection of the 6th and portion of the 7th ribs. Diffuse thickening of the pleura posteriorly. Slight retraction of the mediastinal contents to the left. Circumscribed mass extending from the left border of the aortic knob to the mid. of the left ventricle. This mass did not pulsate on fluoroscopy.

12/4/51: Circumscribed, non-pulsating mass in the left parahilar and paracardiac regions apparently due to thickened indurated pleura. Considerable dilatation of the lower thoracic aorta displacing the esophagus forward and to the left. Aneurysmal dilatation involving the arch of the aorta.

E.K.G. 11/30/51 "Comparing present record with all previous records shows that a posterolateral myocardial infarction probably occured about 6/2/51, with gradual resolution. The present changes bring up the possibility of ventricular aneurysm."

Case presented from the wards of the Fourth Medical Division, Bellevue Hospital, Dr. Charles Wilkinson, Dir.

Pathological Findings

Necropsy revealed 3 apparently independent pathological processes.

1. There was a *malignant tumor, type unidentified, involving the celiac lymph nodes and liver, possibly sympathicoblastoma arising in the celiac ganglia.* Microscopically the tumor has many characteristics of an epithelial tumor. No primary site in the epithelial viscera was found. The cells are not arranged in rosettes, nor are neurofibrillar demonstrable. Nevertheless the other features of the cells (small oval nuclei, scanty cytoplasm and occasional arrangement in bundles) are not unlike those of sympathico blastoma. The lesion would be rare at this age but is not unknown. We have had a somewhat similar case in a woman of 75 (accession #38263), and a clear cut instance in a man of 70 has recently been reported.[1]

2. The second lesion was *syphilitic aortitis with aneurysmal dilatation.* The thoracic aneurysm was largest in the descending portion. The surgical wrapping with polyethylene film was incomplete because of technical difficulties. Another area of dilatation was present in the abdominal region.

3. Apparently unrelated to either of these was a process of *widespread pathological calcification of unknown etiology.* This was most prominent in the kidneys, involving glomeruli as well as the tubules. This calcification was associated with necrosis of the tubular parenchyma but was apparently quite acute. The nature of the renal lesion is not clear. It bears considerable resemblance to that of mercury nephrosis; there is no further support for this diagnosis. In addition there was early calcification of the myocardium of the left ventricle; this apparently involved a loose combination with the muscle protein since considerable hematoxylin could be seen diffusing from the cells. There was no definite evidence of loss of viability of the myocardial fibers; ordinarily calcification only occurs in necrotic myocardium.[2] The tumor in many areas also had undergone necrosis and calcification; this is not an infrequent finding in many malignant tumors in general, or in sympathicoblastoma in particular. No explanation for this pathological calcification is forthcoming; such indeed, is true of a fair proportion of cases that have been compiled from the literature.[3] The parathyroids were not enlarged grossly; microscopically one was available for study. It revealed no hyperplastic changes. In the lumbar vertebrae very mild osteoclastic activity was present.

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PATIENT A.G.

This was the 4th B.H. admission (5/8/52) of a 52-year-old P.R. female who spoke no English. She complained of generalized lower abdominal pain, polydipsia and polyuria for two weeks PTA. Forty hours PTA, she began vomiting a whitish liquid material.

1st B.H. Admission (10/2/51) was to a surgical ward for ulcerations of both feet, polyuria and polydipsia. A similar episode had been treated three years previously in a P.R. hospital at which time she was told she had "sugar diabetes". Symptoms dated back to 1935. Therapy in P.R. consisted of surgery on right foot, diet and insulin and was followed for less than one year. Two years prior to 1st admission the ulceration recurred and became progressively worse until admission. Six months previous to 1st admission, she developed ulceration of right foot, bilateral edema and severe pain in legs, and marked weight loss. There was no history of lues, TB or neurologic disorder. Surgery had been performed on left foot (congential deformity?) 2½ years PTA and a lump was removed from left thigh at the same time. Menopause had occurred four years PTA.

Physical Examination: B.P. 190/100 T. 100°F R. 20 P. 84. The patient was a timid, chronically ill appearing P.R. female. There was bilateral 2 + pitting ankle edema with ulcers on soles of both feet. Fundi showed arteriosclerotic changes. Peripheral pulses were good in both legs. Medium moist rales heard in both lung bases. Heart had PMI in 6 ICS to left MCL. NSR with A2 > P2. PR — VR — 84. Grade II apical systolic murmur. Abdomen was obese without palpably enlarged liver spleen.

Course in Hospital: Urine showed Sp. Grav. 1.024, 2 alb., 3 sugar and no acetone. Blood sugar was 393 mg.%. Ulcers healed by conservative management of one month and she was discharged on 40 u. of PZI on 11/8/51.

2nd B.H. Admission (12/15/51) was for possible intestinal obstruction. She had a history of dysuria for 10 days PTA. Intestinal symptoms disappeared spontaneously. Liver was found to be four FB*ths*, spleen one FB*th* below costal margin and a left 3rd nerve palsy was noted. Because of spiking fever, a G.U. work-up was done revealing cystitis. This responded to chloromycetin. Liver biopsy showed normal liver. Heterophile and febrile agglutinins were negative. Trichinella precipitin test was positive but was felt to represent an old infection. Work-up was thought to be unrevealing except for poorly controlled diabetes, the previously mentioned cystitis and diabetic neuropathy as cause of 3rd nerve palsy. Lumbar puncture was normal. She was discharged on 40 units PZI to diabetic clinic on 1/17/52.

3rd B.H. Admission (2/26/52) was because of three positive blood cultures for *staph. albus*, which had been taken on previous admission. These reports were forwarded to the clinic which then re-admitted her for further study. She was afebrile and asymptomatic during hospitalization. Serial blood cultures were negative and she was discharged to the clinic on 40 units PZI on 3/9/52.

4th B.H. Admission (5/8/52) was to the emergency ward. She had rarely attended clinic, never checked her urine nor taken insulin regularly between hospital admissions. Two weeks pre-

viously, she began complaining of lower abdominal pain which was fairly constant. She also noted polydipsia and polyuria. Forty hours PTA, she began vomiting a whitish liquid and continued to do so until admission. She also noted chills and fever.

Physical Examination: B.P. 110/60 P. 124 T. 102.4°F R. 20. The patient was drowsy and had grunting respiration without acetone odor to breath. She was profoundly dehydrated. Skin cool and dry. A bony exostosis was noted in left frontal region. Pupils reacted to L and A. Fundi not visualized. Right tonsillar hypertrophy noted, tongue dry. Trachea midline, lungs clear to P and A. Heart left border just outside MCL in 6th ICS. NST. Systolic gallop at apex and base with Grade II apical systolic murmur. No masses in abdomen but peristalsis hypoactive. There was left CVA tenderness. Toes of left foot deformed and there was edema of both legs. Lichenification noted over dorsum both feet. Radial and dorsalis pedis pulses faint. There was generalized muscular hypotonicity. Uterus was smooth, enlarged and retroverted.

Course in Hospital: Admission urine was grossly purulent, contained 4 + albumin, 4 sugar, no acetone, many rbc's and wbc's. Culture yielded *E. coli*, from both blood and urine. Blood sugar was 350 mg.%. Aspiration of stomach contents revealed 4 + blood. The patient was started on penicillin, aureomycin, i.v. fluids and regular insulin following development of a shock-like syndrome with systolic BP below 100 and unobtainable diastolic pressure. BP rose sharply and medium moist rales developed in both posterior lung bases after 3500 cc. of i.v. fluid with urinary output of only about 500 cc/24 hours.

An extensive thrombophlebitis of right arm had developed by 5/13/52. A persistent, ill-defined right abdominal mass was also noted. This was thought to be kidney.

She was cystoscoped on 5/15/52 on right side only because of danger of procedure in a uremic patient. The urethra and bladder were normal. Two whitish, tenacious objects were seen free in the bladder. These were first thought to be calculi and were removed with biopsy forceps for pathological examination. The right renal pelvis was dilated with narrowing of uretero-pelvic junction. Films showed fuzzy appearance of upper group of calices "suggestive of acid fast lesion" but cultures and smears for AFB were negative.

On 5/17/52 and 5/18/52, sympathetic blocks were done for thromobophlebitis of right arm. On 5/18/52, the clinical diagnosis made on 5/14/52 by Dr's Gais and Nelson in joint consultation was confirmed by pathological report on the tissue obtained during cystoscopy from the bladder.

Although her thrombophlebitis and urinary output improved, she developed a progressive azotemia with acidosis, hyponatremia and hypochloremia. Chloromycetin was started on 5/26/52. By 5/27/52, widespread protein breakdown became apparent. Enlarging decubitus appeared on buttocks, breasts and side. She was given 1500 cc. of blood, high protein-high CHO tube feedings. An abscess was drained on 6/7/52 from left antecubital fossa but the arm healed poorly. By 6/11/52, blood chemistries had improved but fever had continued throughout hospital course. On 6/13/52, she lapsed into unconsciousness and died quietly.

Laboratory Data

Urine:

Date	Cath.	Color	Sp. Gr.	pH.	Alb.	Sug.	Acet.	WBC	RBC	Other
10/3/51	no	yellow	1.024	—	2+	3+	0	0	0	0
12/16/51	no	yellow	1.014	ac.	2+	trace	0	20-30	rare	hyaline cast
12/20/51	no	cloudy	1.016	ac.	3+	1+	2+	50-60	5-6	0
12/21/51	yes	cloudy	1.016	7.0	0	4+	0	0	0	0
12/27/51										
1/14/52	yes	cloudy	1.010	7.5	0	1+	0	numerous	numerous	
5/8/52	yes	smoky	1.012	5.5	4+	4+	0	4+	4+	wbs clumps
5/9/52	yes	purulent	1.012	5.5	4+	1+	0	4+	2+	wbs clumps
5/20/52	yes	yellow	1.011	ac.	4+	4+	0	4-6		yeast cells
6/9/52	yes	straw	1.008	alk.	0	0		clumped	clumped	
6/16/52	yes	straw	1.019	alk.	0	0		—	6-8	—

Urine (continued)

Date	Urob.	Bile
12/27/51	0	0

Blood:

Date	Hgb.	RBC	WBC	Tr.	P	L	M	E	B	Smear	ESR	Hct.
10/3/51	11.4											
12/16/51	11.0		10,000		68	32						
12/20/51	10.5		14,000									
12/21/51	11.0	3.79	7,650	3	67	29	1				2	
1/7/52											64	26%
2/27/52	9.5	3.30	7,500	11	34	33	3	9			130	
5/8/52	12.0	4.07	17,000	48	38	12						
5/9/52	8	3.03	16,800									25%
5/19/52	11.0	3.82	26,900	18	61	21						34%
5/21/52	8.5	3.07	21,600									27%
5/27/52	6.0	2.6	18,800	2	73	23	1	1		hypersegmented polys.	60	25
6/2/52	8.0	2.64										

Blood Chemistries:

Date	Sug.	NPN	CO2	A/G	Chol. Esters	I.I	CFT	Alk. Ptase	BUN	Creat	P	Na	K	Cl
10/3/51	393													
12/17/51	333								30.4					
12/20/51	449								44.6	2.5	4.34	117	4.3	
12/24/51		45		3.8/4.3	222	9	neg.	5.0						90.5
1/9/52				3.3/2.9		4								
1/15/52	151													
2/27/52	186													
5/8/52	350+	53	19									129	4.0	
5/19/52	7400	168	9									113	5.5	93.
5/21/52	237	141	22	2.2/3.8						3.5		127	3.2	
6/5/52	216	48										137	3.9	
6/12/52	193		19									134	3.8	112

Blood Chemistries

Date	BSP
1/9/52	negative

Mazzini neg. on each admission.
Trichinosis precipitive test positive on 12/24/51 and 1/14/52.
Febrile agglutinins neg. on 12/24/51.
Prothrombin time 64% on 12/28/51.
EKG on 1/4/52 showed no diagnostic changes. EKG on 5/26/52 revealed considerable axis shift with ST-T wave changes in aVl. "This may be positional in nature but lateral wall damage cannot be ruled out".

Laboratory Data—(Continued from preceding page)

Cultures:

Date	Source	Organism
1/7/52	Blood	Staph. albus (coagulase neg.)
1/8/52	Blood	Staph. albus (coagulase neg.)
1/9/52	Blood	Staph. albus (coagulase neg.)
1/9/52	Urine	B. Proteus overgrowing gram + cocci
1/11/52	Blood	negative
1/15/52	Urine	B. Proteus
1/19/52	Blood	negative
2/26/52	Blood	negative
2/27/52	Blood	negative
5/8/52	Blood & urine	E. coli
5/9/52	Blood & urine	E. Coli
5/12/52	Blood & urine	Blood neg. Urine showed E. coli & coag. neg. staph.
6/4/52	Blood	Diptheroids
6/5/52	Urine	B. proteus, staph. albus.

G.I. #1 on 12/27/51 showed deformity duodenal bulb.
Cholecystogram on 12/20/51 failed to reveal gallbladder.
Bilateral retrograde pyelogram on 12/18/51 revealed dilatation pelvis of right kidney and clubbing of calyces of right kidney. Liver enlarged. Marked calcification of pelvic vessels was seen. Double exposure film demonstrated movement of both kidneys.
Retrograde pyelogram on 5/15/52 (right side) "demonstrates deformity and clubbing of calyces and dilatation of pelvis of right kidney. In addition, the superior calyx is irregular and indistinct. The proximal ureter appears narrowed".

Case presented from the wards of the Fourth Medical Division, Bellevue Hospital, Dr. Charles Wilkinson, Dir.

Pathological Findings

The changes in the kidney were of two sorts:

1. *Intercapillary Glomerulosclerosis* of moderate severity was present. This was not associated with a fully developed, clinical Kimmelstiel-Wilson syndrome. Although the albuminuria apparently subsided following cystoscopy, hypoalbuminemia did progress in the final weeks of life (A/G = 1.6/4.0, 5/28/52).

2. The tissue extracted from the bladder during cystoscopy proved to be a necrotic renal papilla. A similar slough was present in the superior calyx of the right kidney at necropsy. In this region, the pyramid had disappeared and the calyx became rounded. Superficially this resembled localized hydronephrotic atrophy; nevertheless it represents *erosion of the renal medulla following necrosis of the pyramid*. Although "necrotizing papillitis" is most commonly found at necropsy, it has on a few occasions, like the present one, been followed by sloughing of the lesion with a degree of healing.[1, 2, 3, 4] Perhaps two histological patterns should be distinguished: 1) that in which necrosis predominates and so resembles an infarct, and 2) the suppurative variety. The pathogenesis is not clear. The diabetes presumably favors bacterial action.[4] Monilia-like yeast was present in the necrotic detritus obtained at biopsy and necropsy; whether this

was pathogenic in the present instance cannot be ascertained but this does not appear likely. Urinary obstruction cannot be implicated in this case.[2] The papillitis was predominantly of the necortizing variety; chronic inflammatory reaction was of minor proportion and may in a large part have been secondary to the erosion. This appearance has suggested a vascular component to some investigators.[1] The similarity to the distribution of tuberculous lesions in the kidney suggests that the pathogenesis involves accumulation of the organisms in the collecting tubules. We have observed a striking increase in the incidence of the lesion in recent months; no explanation is forthcoming. It is not inconceivable that some therapeutic factor is implicated.

Hyalinization of the islets of Langerhans was present in some of the lobules —a lesion most characteristic, but not pathognomonic, of diabetes mellitus.

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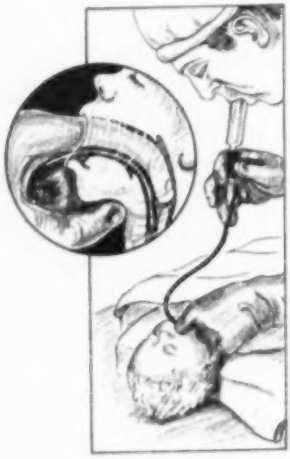
Clini-Clipping

Aspiration of mucus from air passage of the newborn, with tracheal catheter. Insert — Method of introducing the catheter. Epiglottis is located with the index finger and tube is passed along the palmar surface of the hand and the finger which guides it into the larynx and trachea.



The Treatment of Warts

This paper will deal with warts of all types, exclusive of plantar warts which were discussed separately in detail in a recent issue. Treatment will be emphasized since warts do not usually present a diagnostic problem, but rather a therapeutic once.

Warts are benign epithelial growths caused by a virus. Clinically they are classified into the following seven groups, of which the first six are only morphologic variants:

1. Verruca Vulgaris (common wart)
2. Verruca Filiformis
3. Digitate Verruca
4. Periungual and Subungual Verrucae
5. Verrucae Planae Juvenales (flat warts)
6. Verruca Plantaris (plantar wart)
7. Condylomata acuminata (venereal warts)

Each type presents a distinct clinical picture and a cosmetic therapeutic challenge. They are prone to recurrence unless destroyed deeply, yet any form of therapy which will produce scarring is frowned upon since they will not infrequently disappear spontaneously without any residua.

Verruca Vulgaris (Common Wart) The common wart consists of a sharply circumscribed rounded grayish excrescence up to peasize or larger, having a roughened cauliflower-like surface and a sessile base. These lesions are frequently multiple, spreading by autoinoculation. They occur most commonly in children or adolescents; the sites of predilection are the dorsa of the fingers and hands.

If they are single or few in number, they can be destroyed by the surgical diathermy current. The lesion is first infiltrated with procaine. Using a current of medium intensity, the desiccating needle is introduced halfway into the wart for a period of one or two seconds; the needle is reintroduced at different sites until the entire wart has blanched and softened. The lesion is then easily curetted off with a dermatologic curette, leaving a bloodless base. The base is then very lightly desiccated using a current of low intensity.

When the lesions are numerous or occur in young children, the maceration technique is often valuable. It will be described in detail under the treatment of periungual warts.

Filiform Verruca The filiform verruca consists of a thread-like, skin-colored projection covered with a smooth or slightly roughened epidermis. These lesions are usualy multiple and are found on the eyelids, neck and bearded region. In this latter site, they may be very numerous, being spread by shaving.

In the treatment of these lesions, one

Filiform Warts

must be careful not to produce scarring since they occur on the face. They can be treated without anesthesia and still cause very little discomfort to the patient. With the desiccating apparatus set at the weakest current, each lesion is quickly sparked for a fraction of a second. A tiny crust will form and fall off in a few days. The pain is minimal.

When treating the bearded region, where not infrequently hundreds of lesions may be seen, a side light is often helpful to throw the lesions into relief. The patient is advised to use an electric razor to avoid reinoculation from a sharp blade. He should return for treatment every two to three weeks for a few sessions so that new lesions may be destroyed before dissemination occurs. This type of therapy will not produce scarring.

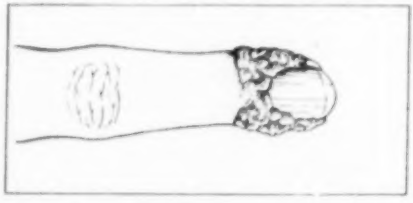
Digitate Verruca The digitate verruca is similar to the filiform verruca, only larger. It consists of a finger-like projection formed by the grouping together of numerous filiform elements having a common base. It occurs most commonly on the face and the mucous membranes of the mouth, especially the lips in children, being inoculated from warts on the fingers. It may be seen interspersed with smaller filiform warts on the bearded region.

The treatment is essentially the same as for verruca vulgaris, i.e., local procaine anesthesia, light desiccation and curettage. Another method consists of infiltrating the lesion with procaine and cutting it off at its base with a pair of small sharp scissors. It is then very lightly desiccated, or touched with a cotton applicator moistened with a 50% solution of trichloracetic acid.

Healing is rapid, and the results are better than with verruca vulgaris, since the digitate wart projects outward from the epidermis making it more amenable to complete eradication without scarring or recurrence.

Periungual and Subungual Verrucae Another frequent location for warts is the nail fold and adjacent subungual tissue. The lesion may be small and appear as a callus on the side of the nail, or it may involve the entire periungual area, and spread under the free edge of the nail to the nail plate. It consists of a hard infiltrated and elevated lesion with an irregular roughened surface. Frequently, several nails become involved.

If the lesion is small, it can be re-



Periungual Wart

moved under local procaine anesthesia with desiccation. When it is more extensive, this procedure is not advisable since it will leave a large tender granulating wound for several weeks, and may also cause permanent damage to the nail matrix.

The maceration technique may prove very useful. The nail is cut back as far as possible; the warty tissue is then painted with bichloracetic acid on a cotton applicator and then covered with adhesive tape placed directly on the wart without intervening gauze. A piece of 40% salicylic acid plaster cut to the size of the wart may be applied first under the adhesive tape. This is left on for one week, the patient changing the tape only when it is soiled. The wart may be tender for the first few days.

The patient returns at the end of one week at which time the new softened and macerated top portion of the wart can easily be pared down with a scalpel. The acid is again applied and the lesion covered with tape. This procedure must be repeated several times, but it has the advantage of not incapacitating the patient in any way.

Roengten ray therapy is also an excellent method for this type of wart. When it is properly administered, the results are excellent. It is a fast effective method causing no discomfort to the patient.

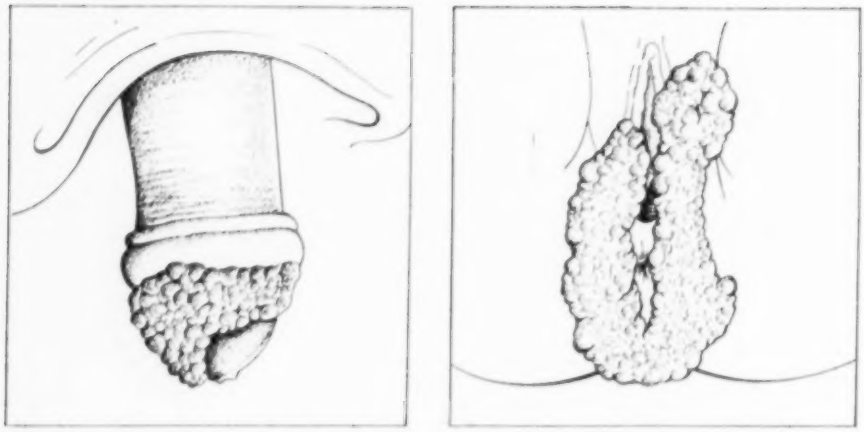
Verrucae Planae Juvenales (Flat Warts) Flat warts are small rounded or polygonal, flat-topped yellowish or skin colored lesions. They occur in groups and are seen most commonly in children on the backs of the hands and face.

The profusion of the lesions, their location and character obviate the use of any destructive measure. It is in this group of warts that suggestion therapy gives its best results. A keratolytic lotion containing 8% resorcinol and 4% salicylic acid in white shake lotion will often be of value.

Flat Warts

Condylomata Acuminata (Venereal Warts) Venereal warts develop near the mucocutaneous junctions of the glans penis, the labia and the anal region. They consist of closely aggregated pink to brown projections of various sizes. In most areas, the growth may be luxurious and large plaques may be formed. The exact etiology is not known, although a virus is incriminated. The lesions are autoinoculable and seldom disappear spontaneously.

The use of podophyllin is almost specific for this condition, and has supplanted all other previously used methods. The normal skin surrounding the lesions is protected with vaseline. A solution of 25% resin of podophyllin in tincture of benzoin is applied to the warts, allowed to dry, and covered loosely with gauze. The



Condyloma Acuminatum

patient is told to wash it off in eight hours. The number of treatments needed depends on the size and thickness of the lesions.

Summary

The treatment of the various types of warts, including venereal warts, is given in detail with a brief description of each variety. Since warts are benign growths and occur most commonly on the face and hands, a good cosmetic result should always be sought for, and it can usually be obtained if one applies the proper therapy.

EDITORIALS

American Medicine Is Free

We sometimes feel doubtful as to whether the practitioner, absorbed in his exacting work, fully realizes the privileges and rights that he enjoys in this democratic country. Organized medicine itself, based upon the County Society unit, exemplifies the democratic process from bottom to top.

One has only to think of the situation of medicine in totalitarian countries to realize the freedom that characterizes our American system.

England itself, even though non-totalitarian, illustrates the undesirable features of government controlled practice.

It is only in a wholly free country, enjoying free enterprise in medicine as in all other things, that our science and art can attain full fruition.

Atomic Medicine

The World Health Organization (WHO) is properly engaged in earnest consideration of the role of atomic energy in the development of medicine and biology, and with its responsibilities in this field.

There are two main topics. The first topic includes problems of health protection in dealing with atomic energy, the disposal of radioactive waste material, nuclear reactor safety, the definition of a radiological unit and the standardization of radioactive material; the second topic is the constructive use of atomic energy in biology, medicine and public health.

An important aspect of atomic energy has to do with the use of radioactive isotopes in diagnosis and research.

Another aspect has to do with nutritional problems, the solution of which depends on advances in the use of atomic energy in agriculture and fisheries.

It is the peaceful uses of atomic energy that will open up a great new field for medical exploitation. Atomic medicine is in process of being born and practitioners have much to learn.

In the light of the impending revolution in medical matters we can imagine what the programs of our great medical organizations (societies and publications) will some time be like—as different from the present programs as are those of this century from those of the nineteenth.

American, Canadian, English and Belgian scientists, devoted to the medico-biologic aspects of atomic energy, discussed these matters at Geneva in December and a conference on the peaceful uses of atomic energy has been called for by the General Assembly of the United Nations. This conference is to be held not later than next August.

Taxes and Related Matters

A physician writing in the *British Medical Journal* proposes that Parliament impose a tax on fat persons.

Such a tax would be more rational and equitable than our Internal Revenue tax on the wages of household employees. It would benefit the fat person taxed as it would provide the needed incentive to reduce weight.

Our levy on houseworkers' wages benefits no one—unless it be Washington's political parasites.

In Arkansas a bill has been introduced to tax bachelors $750 annually. This would seem to prove that the country still possesses a sense of humor, but maybe it is motivated by a fanatical determination to augment the birth rate. However, the question is still open to debate as to whether the Arkansas bachelors' record for legitimate parentage would be any better than for their present record of illegitimate fatherhood.

The Unique Biology of the Irish Nation

Since marriage is practically indissoluble in Ireland men do not enter upon it enthusiastically. The few girls who succeed in capturing husbands are seldom less than 28 years of age. Then there is the terrifying certainty of a large family—6 to 12. There is very little artificial limitation of families.

Thus marriage is a heroic enterprise and as a consequence four-fifths of Irishmen between 21 and 35 are bachelors.

It is interesting to consider these facts in reference to the future of a great nation. We cannot believe that that future is actually in jeopardy.

Irish blood is everywhere but it is of the fate of a nation as such that we are writing.

Sense of Vibration, or Pallesthesia

A Clinical Observation

HAROLD R. MERWARTH, M.D.
Brooklyn, New York

It may be defined as the ability to appreciate a feeling or sense of vibration, "a buzz," when an oscillating tuning fork is placed over bony prominences. This is an important part of a neurological examination and may yield valuable information.

Normally, vibration is appreciated at all ages, although there may be a diminishing capacity to appreciate vibration in the elderly group of patients. A tuning fork with 128 vibrations per second (c-128) with weighted ends, is most commonly used. The neurologist also uses a tuning fork with 256 vibration per second. In persons of a younger age suffering from multiple sclerosis, the latter may not be felt, while the c-128 fork will be felt.

In the examination it is important to test the sense of vibration over the bony sacrum, and the spines of the vertebrae. These bony points are often skipped by careless examiners. In general, if the vibrations can not be felt over the anterosuperior iliac spines, they should not be felt over the sacrum. The contrary should arouse the suspicion of malingering, or hysteria.

By proper testing one can be positive that a patient detects vibration. The patient can be tested by setting the tuning fork in maximum vibration and applying it over a bony prominence. Then the patient with eyes closed should be asked to state promptly when the feeling of vibration or "buzz" ceases. This is accomplished by the examiner lightly interfering with the oscillating prongs of the fork to stop the vibration. It must be done lightly so as not to communicate to the patient the jar of stopping the vibrations and thus destroying the value of the test. If the appreciation of vibration is normal, the patient will be able to state promptly when the vibration ceases. A sufficient number of accurate answers should convince the examiner that the patient does detect vibration. Simply to ask the patient whether he feels vibration is not enough. It must be proven that he feels it.

Vibration sense is not felt on bone alone. This can be proven by grasping a fold of skin between two fingers, and placing the top of a vibrating fork against it; the vibrations can then be

felt. However, the sense of vibration is felt better over bone.

The tuning fork is useful in determining malingering, or faking. Normally, vibrations over a solid bony point like the skull, frontal bone, nose, chin, sternum, sacrum, and vertebral spines, should be felt equally at or near the mid line. In faking, or malingering, the patient will state he does not feel it just to one side of the mid line, such as the frontal bone or sternum, and then state that he feels it just as the top crosses the mid line. In such cases similar disparities can be demonstrated by using the vertebral spine, or the sacrum. Similarly, the patient will "amputate an extremity" to vibration just as he does to pin prick. Over a point on the tibia he may say that he does not feel vibration, while immediately proximal or distal to this line, he may say he feels it. This is impossible over a solid conducting medium like bone.

The use of the tuning folk in the neural examination can be of value in detecting peripheral neuropathies (diabetes, tabes, subacute combined sclerosis) and, in addition, is an aid in detecting hysteria, or malingering as noted above.

NEUROLOGY

HAROLD R. MERWARTH, M.D., F.A.C.P.*

Electroencephalographic Studies During the Course of Insulin Coma Treatment of Schizophrenia

Louis Halle and associate (*Journal of Nervous and Mental Diseases*, 119: 315, April 1954) report a study of the encephalograms of 50 schizophrenic patients before, during and after deep insulin coma therapy. Before treatment, the electronencephalograms were within the normal range, without the usual "signs of abnormality." In 26 cases the alpha index showed a variation from normal, most frequently a decrease.

At least forty hours of deep insulin coma therapy caused no progressive or persistent disturbances in the pattern of the electroencephalogram in these cases. There were 26 patients in this series in whom clinical improvement resulted from the insulin coma therapy: in 23 of these the pre-treatment encephalogram was normal; the alpha index showed no change in 17 of these cases; in 5 cases there was a decrease and in 4 cases an increase. The alpha index was therefore of "little value" in predicting or "evaluating" clinical improvement under insulin therapy. Such abnormalities as were observed during

Merwarth

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or following a single insulin coma treatment were "transitory and reversible," probably to be attributed to altered but reversible cerebral metabolic function. In this respect the electroencephalographic findings in insulin coma therapy differ from those reported for electroshock therapy, and are of value chiefly as "corroborating the neurologic status resulting from a temporary disturbance of cerebral chemistry" resulting from the insulin coma therapy.

COMMENT

It must be remembered that hypoglycemia, sufficiently prolonged, may produce irreversible brain changes. This may be noted in the diabetic, in whose case the insulin control of blood sugar level is difficult to regulate. It may be found in adenoma of the pancreas, where convulsions may be produced.

H.R.M.

Further Experience in Use of Thiamylal with Electroshock

E. A. Browne, Jr. (*A.M.A. Archives of Neurology and Psychiatry*, 72:88, July 1954) reports results of electroshock with thiamylal (Surital) sodium in 77 patients, a total of 1,007 electroshocks. The electroshock therapy in these cases was given on "the usual indications"; and other forms of treatment were used as indicated. Thiamylal was used only on definite indications; with its use, electroshock was found to be safe for patients with fractures or other bone lesions; in these cases the dose of thiamylal must be sufficient to abolish the seizure; in cases of cardiovascular disease and in other conditions in which thiamylal is used, the dosage is smaller, sufficient to abolish the lid reflex. Thiamylal has been used in a number of patients who are "apprehensive" in regard to electroshock therapy with good results. There was one death in the series due to physical complications severe enough to cause death "in themselves." Complete thiamylal courses were given to 55 patients; the other 22 patients in the series were given standard electroshock treatments at first and the course completed with thiamylal; or were given thiamylal at first and the course completed with the standard electroshock treatment. Thirty-one patients, or 42 per cent; this series were considered "improved" either with improved hospital adjustment or release to home; 24, or 31 per cent, showed temporary improvement—lasting less than six months; and 22, or 28 per cent, showed no immediate or definite improvement. Of the group of 31 patients who were definitely improved, 25 had been given complete thiamylal courses; of the group of 24 patients showing temporary improvement, 18 had had complete thiamylal courses; of the group of 22 patients with no definite improvement, 12 had been given complete thiamylal courses. The chief advantages of the use of thiamylal with electroshock are that it renders electroshock safe for patients with bony lesions, and safer for patients with cardiovascular disease than standard electroshock; it is also "useful for patients with anxiety regarding the treatment."

COMMENT

Electroshock therapy is a generally accepted procedure in the handling of properly selected cases of various types of mental illness. Its efficacy in the treatment of the depressed and depressed-agitated patient can not be denied. Without question it has rehabilitated patients who otherwise might require institutional care, and thus results in a distinct financial saving to the family; for mental illness is completely incapacitating in many cases, a total illness in contrast to pure body ailment, as often individuals in the latter case, can still earn a living.

The use of sedation prior to the administration of electroshock therapy is beneficial from many angles, and particularly, it does relieve the anxiety found so often just prior to a treatment.

H.R.M.

Experiences with RO-2-3059, as an Anticonvulsant

D. M. Palmer *(Neurology*, 4:345, May 1954) reports the use of a new anticonvulsant—RO-2-3059, in the treatment of 43 epileptic patients in an outpatient clinic. RO-2-3059, or 1-benzyhydryl-3-acetylurea, is derived from a hydantoin. At first RO-2-3059 was given alone, but it was found that a dosage in excess of 500 mg. per 50 lb. body weight resulted in muscle tremors and signs of excessive stimulation of the central nervous system. A combination of RO-2-3059 with phenobarbital was then used, given in tablets containing 500 mg. RO-2-3059 and 45 mg. phenobarbital. This combination of drugs has been used in about 40 patients, but only 20 have been continuously followed up, while under treatment for two to three years. In 8 of these 20 patients this combination was the only anticonvulsant agent used; the seizure control was rated as "excellent" in 5 of these patients and "good" in 3 patients. The other 12 patients were given one or more other anticonvulsants or supplementary doses of phenobarbital; the seizure control was rated as "excellent" in 2 of these patients, "good" in 7, and "fair" in 2 patients, but "poor" in one case. The combination of RO-2-3059 and phenobarbital was found to be more effective against grand mal seizures than any other type of epileptic seizure, and least effective against petit mal. Even when dosage was relatively high up to 1500 mg. RO-2-3059 daily side effects were mild; the sense of well-being and euphoria noted by patients on RO-2-3059 therapy was considered to be an advantage—in contrast to the "depressed or retarded state" often noted with other anticonvulsants. The author is of the opinion that the combination of RO-2-3059 with phenobarbital should be given "more extensive study" in the treatment of epilepsy.

COMMENT

The Editor of the journal of "Neurology" added to this article a historical note culled from a paper by W. R. Gowers, entitled, "Epilepsy and Other Chronic Diseases," published in 1885. The observations made by this brilliant English clinician are just as pertinent today. For readers who do not have an opportunity to read Dr. Gower's observations, they are copied here:

"We have still too little definite knowledge of the intimate pathology of epilepsy to permit safe generalization regarding the possible mode of action of the several drugs which are found, clinically, to be useful. All that can be done is to recognize the kind of action which they have been found by experiment, to exert upon the nervous system."

"The character of the cases in which this or that drug is especially useful, i.e., the indications" for special treatment, is a subject of the greatest practical importance. There is no point in therapeutics, however, more open to fallacy, or on which more generalizations have been published which subsequent observation has proved to be inaccurate. No disease baffles more completely the therapeutic investigator. Of two cases that seem essentially similar, one is influenced by a drug that has no effect whatever on the other. While pointing out, therefore, when possible, the class of cases in which this or that method of treatment has seemed most useful, I have thought it better to illustrate the effect of remedies by the brief narration of some cases in which that effect was well marked, rather than to formulate a series of precise "indication" which experience might fail to confirm. These described are selected from a larger number of those which seem most instructive."

From the author's description of the effects of this drug, certainly more clinical trial is required before it will replace other anticonvulsant drugs now in use.

H.R.M.

A Study of the Effectiveness of Drug Therapy in Parkinsonism

H. A. Kaplan and associates *(Journal*

of Nervous and Mental Diseases, 119: 393, May 1954) report a study of 33 patients under treatment for Parkinsonism at an out-patient service. A complete neurologic examination, electromyographic and dynamometer studies and tests with the Purdue Pegboard were made for all patients before treatment was begun. The patients were divided into four groups; treatment in one group was begun with Artane, in one with Panparnit, and in one with hyoscine, while the fourth group was given a placebo; all these medicaments, including the placebo, were prepared in capsules identical in appearance. Each medicament was given for four weeks in increasing dosage, then for one week in reduced dosage; the tests were then repeated and each group was given a different treatment; in this way at the end of a twenty-week period, each patient had been given each one of the drugs used and the placebo. In this way each patient "served as his own control." Reports by the patients on their general clinical improvement, indicated that subjective improvement occurred in 62.8 per cent under treatment with Panparnit, in 65.6 per cent under treatment with Artane; in 40 per cent with hyoscine; and in only 18.1 per cent with the placebo. Neurological examinations showed definite improvement in 31.4 per cent under treatment with Panparnit; in 40.6 per cent with Artane; in 13.3 per cent with hyoscine; and in only 6 per cent with the placebo. Electromyographic studies showed that the drugs employed did not reduce the amplitude of the tremor. Most of the psychomotor tests showed definite improvement with the various methods of treatment employed including the placebo; statistical analysis showed "unreliable suggestion" of a slight superiority of the drugs used over the placebo. The greater part of the improvement in these respects seemed to be due to practice, to psychologic effects of the treatment regimen and the repeated tests or to both.

COMMENT

Drug treatment of Parkinsonism is purely palliative. The use of drug therapy in no way alters the basic pathology of the disease, but on the other hand, drugs do modify symptoms. Having worked for years in the clinics of various hospitals in which large numbers of the victims of Parkinsonism have been treated, it is my firm conviction that patients are helped by drug treatment. Many can be carried for long periods over what otherwise might be a troublesome time in their lives.

There are many drugs available. Each worker has his favorite medication, alone, or in combination. Unfortunately, patients rapidly acquire a tolerance for any drug, so increasing doses or a shift to another medication must be attempted.

To date I have not been highly impressed with the results obtained by a number of varied approaches to the surgical treatment of this condition. Since the old age population of our country is increasing rapidly, there can be expected to be found a greater number of victims of the arteriosclerotic type of Parkinsonism. Let us hope that better drugs and an ideal surgical approach will be found.

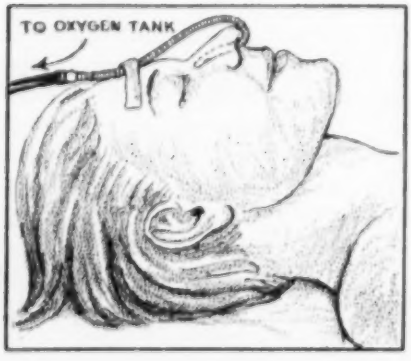
H.R.M.

Cerebrospinal Fluid Changes Following Closed Craniocerebral Injuries

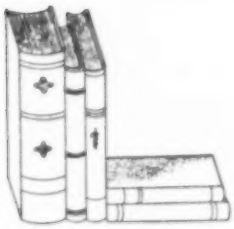
R. A. Davis (*Neurology*, 4:422, June 1954) reports a study of 43 patients with closed head injury; x-ray examination showed no evidence of skull fracture in any case; all patients had been unconscious after the accident for more than five minutes. In 19 patients who were unconscious for over five minutes but less than one hour, lumbar puncture was done within ninety hours after the injury in most cases; the pressure of the cerebrospinal fluid was elevated in 10 of these patients; the sugar was above normal in 11 cases; there was an

increased number of erythrocytes in 3 patients; and elevation in the protein level in 6 patients. Thirteen patients were unconscious for more than one hour but less than twenty-four hours; in 5 of these patients the protein level of the cerebrospinal fluid was above normal; the chloride level was abnormal in 5 cases, above normal in 4, and below normal in one (a result of vomiting after the injury); the sugar was above normal in 5 cases; "significant" numbers of erythrocytes were present in 2 cases; the globulin fraction was increased in 3 cases; the pressure of the cerebrospinal fluid was increased in 4 cases, but above 200 mm. in only one. In the group of 11 patients who were unconscious for longer than twenty-four hours—for three to twenty-one days—there was only one whose cerebrospinal fluid findings were normal. The protein of the cerebrospinal fluid was increased in 7 of these 11 patients; increased numbers of erythrocytes were present in 3, and the cerebrospinal fluid pressure was increased 4 patients; the sugar and the chloride were increased in 3 cases. There were 12 patients with disabling sequelae of the head injury; in 8 a "neuropsychiatric diagnosis" was made; in 4 of these patients the protein of the cerebrospinal fluid was increased; there was no increase in number of erythrocytes or in the pressure in any case. In 4 patients the sequelae were neurologic defects; the protein level of the cerebrospinal fluid was high in 3 of these patients; and 2 showed an increase in the number of erythrocytes. Sixteen patients showed some "disturbance of higher cerebral function" immediately after regaining consciousness; 8 of these patients had high protein levels in the cerebrospinal fluid. From these studies the author concludes that the protein level is "the most accurate cerebrospinal fluid guide to the severity of craniocerebral injury." Elevation of the cerebrospinal fluid pressure was found most frequently in patients who were unconscious for less than an hour; in those who had headache after the trauma, increase in the cerebrospinal fluid pressure persisted in over 50 per cent of cases.

Clini-Clipping



Oxygen Administration
Use of nasal catheter in the administration of oxygen (the tape binding the catheter to the nose has been omitted in order to show the position of the catheter).



Medical Book News

Edited by Robert W. Hillman, M.D.

Hepatic Disease

The Hepatic Circulation and Portal Hypertension. From the Department of Surgery and the Laboratory of Surgical Research of the New York Hospital—Cornell Medical Center. By Charles G. Child, III, M.D. In Collaboration with Ward D. O'Sullivan, M.D., Mary Ann Payne, M.D., George R. Holswade, M.D., Roger Milnes, M.D. et al. Philadelphia, W. B. Saunders Co., [c. 1954]. 8vo, 444 pages, illustrated. Cloth, $12.00.

Throughout the book the author gives the chronological history of the research and work done on the anatomy, especially microscopic, and physiology of the hepatic circulation. On this basis he attempts to explain the cause and effect relationships in various phases of intrahepatic and extrahepatic portal hypertensive states and the role played by the splanchnic circulation. Portal venography is well illustrated.

A good portion of the book is devoted to operative research on monkeys and dogs. There are few texts on this comparatively new subject and for that reason, the author is correct in stating that much work has still to be done before final conclusions are reached.

The book is recommended because of its newness and its stimulating and frank presentation.

LEWIS E. SCHOTTENFELD

Clinical Chemistry

Standard Methods of Clinical Chemistry. Vol. 1. By the American Association of Clinical Chemists. Editor-in-Chief: Miriam Reiner. New York, Academic Press, [c. 1953]. 8vo, 142 pages, illustrated. Cloth, $4.50.

This is the first volume in a series of standard methods used by clinical chemists. Revisions will be made from time to time to incorporate new material. Methods used most frequently have been included in this volume, with specialized methods in subsequent issues. Range of normal and pathological is given for each method with a note on precautions in performing test. Methods are tested by a submitter and rechecked, tested, and modified by a checker for validity and practicality. The book is intended for laboratory technicians and chemists. In view of the important role of clinical chemistry in modern medicine this volume will prove of inestimable value.

W. ALAN WRIGHT

Endocrinology

Medical Uses of Cortisone. Including Hydrocortisone and Corticotropin. Edited by Francis D. W. Lukens, M.D. New York, Blakiston Co., [c. 1954]. 8vo, 534 pages, illustrated. Cloth, $7.50.

The stated purpose of the editor is to gather in one volume the sound clinical judgment of outstanding authorities concerning the usefulness of adrenal corticoid therapy in the various medical specialties. Each of the fifteen monographs which comprise this book, is a precise and detailed compilation of pertinent published reports as well as a clear presentation of the various authors' views and conclusions.

The physiology and pharmacology of the adrenal corticosteroids are described in great detail. Both of these chapters are very valuable sources of data concerning the assay of adrenocortical function and the action of the adrenocortical hormones.

This volume is most highly recommended because the practitioner will find this a ready reference book for the practical uses of cortisone and the scholar will find it an encyclopedic review of the literature.

MARTIN PERLMUTTER

Medical Science

The Antiseptic. Monthly Journal of Medicine & Surgery. Golden Jubilee, April 1954. Madras, India, [1954]. 8vo, 732 pages, illustrated. Annual subscription, Rs. 7/8; foreign 15/–.

This special Golden Jubilee issue of *The Antiseptic* consists of over 500 pages and gives a concise picture of medical practice today. Issued to commemorate 50 years of continuous publication, its three score articles cover the whole gamut of medical science. Although most of the articles originate in India, several outstanding medical men from other parts of the world have contributed to it.

Indian medicine is ancient and is now being studied with renewed interest due especially to the recent use of alkaloids extracted from Rauwolfia Serpentina, the root of which has been used as medicine in India for a long time.

The editor is to be congratulated for his selection of material and a task well done.

WESLEY DRAPER

Pathology

Histopathologic Technic and Practical Histochemistry. By R. D. Lillie, M.D. New York, Blakiston Co., [c. 1954]. 8vo, 501 pages, illustrated. Cloth, $7.50.

The new title of this second edition of a work published originally as *Histopathologic Technic* (in 1947) reflects the large volume of active investigation of histochemical procedures during the past few years. The author in his foreword points out that he has endeavored to bring selected variants of the newer methods into the book, and to amend them so that they may be followed without personal instruction by one who has had previous experience. To accomplish this purpose required a great deal of experimentation. That he has succeeded is easily discovered. Older standard technics and the many newer procedures that have created a new science of Histochemistry, to which Lillie has made important original contributions, are presented in simple, straightforward style. This volume will be found extremely useful to workers in the conventional fields of histology and histopathology and makes available, even to those without profound knowledge in biochemistry, many procedures that will be the routine methods of the future.

J. ARNOLD DEVEER

Psychiatry

The Psychology and Psychotherapy of Otto Rank. An Historical and Comparative Introduction. By Fay B. Karpf, Ph.D. New York, Philosophical Library, [c. 1953]. 8vo. 129 pages, illustrated. Cloth, $3.00.

This small book ambitiously gives not only an exposition of Rankian thought but also chapter summaries of Freudian, Adlerian and Jungian psychology. The author stresses the relationship of Rank to these others, especially Freud. There are numerous quotations from Rank's writings to give his exact position in many of the controversial matters. The volume fulfills its promise of being an "Historical and comparative introduction to the subject".

ARTHUR J. LAPOVSKY

Orthopedics

Regional Orthopedic Surgery. By Paul C. Colonna, M.D. Philadelphia, W. B. Saunders Co., [c. 1950]. 8vo. 706 pages, illustrated. Cloth, $11.50.

This book is dedicated to Dr. Royal Whitman, who taught many of us, as well as the author.

Dr. Colonna's book will serve as an excellent text to the undergraduate and the orthopedist. The contents in its 700 pages are too numerous to cover in a brief review.

The chapter on development and physiology of bone is excellent reading. The illustrations throughout the book, including roentgenograms and photographs leave very few subjects untouched. The chapters on bone tumors, neuromuscular disabilities and physical medicine are added attractions to an orthopedic text.

It is an excellent treatise, and as the name implies, every joint is treated regionally, such as, its anatomy, diseases, injuries and congenital malformations. In this way, all the known syndromes are included.

JOSEPH I. NEVINS

Tropical Medicine

A Manual of Tropical Medicine. By Col. Thomas T. Mackie, M.D., A.U.S. (Ret.), Col. George W. Hunter, III, M.S.C., U.S.A. & C. Brooke Worth, M.D. 2nd Edition. Philadelphia, W. B. Saunders Co., [c. 1954]. 8vo. 907 pages, illustrated. Cloth, $12.00.

The authors, assisted by 24 collaborators, have produced a one volume manual on tropical medicine that is as complete, concise, accurate and comprehensive as the average two volume work on this subject. Substantial changes have been made in the context of this second edition in order to include advances in knowledge as well as provide the most recent facts relating to the practice of tropical medicine and tropical public health.

Written primarily for those who are interested in the regions where tropical diseases are prevalent, it includes the health and welfare of the people of those regions.

The commonplace tropical diseases as well as the bizarre are all included as to their distribution, etiology, epidemiology, pathology, clinical characteristics, diagnosis, prognosis, treatment and prophylaxis. The illustrations are profuse and excellent.

The specialist as well as the physician in general practice will find this manual an excellent source and reference book. It should be a required text for all military and public health physicians.

EARL W. DOUGLAS

—Continued on following page

MEDICAL BOOK NEWS

—Concluded from preceding page

BOOKS RECEIVED FOR REVIEW

Genetic Linkage in Man. By R. Ruggles Gates, Ph.D. The Hague, Netherlands, Dr. W. Junk, Publishers, [c. 1954]. 8vo. 46 pages. Paper, $2.00.

XIIE Conference De L'Union Internationale Contre La Tuberculose, [1952]. By the Fédération Brésilienne des Sociétés de Tuberculose. Rio de Janeiro, The Federation, [n.d.]. 8vo. 721 pages, illustrated.

The Bane of Drug Addiction. By Orin Ross Yost, M.D. New York, Macmillan Company, [c. 1954]. 8vo. 155 pages. Cloth, $4.00.

Should You Drink . . . By Charles H. Durfee, Ph.D. New York, Macmillan Company, [c. 1954]. 8vo. 152 pages. Cloth, $2.49.

Smoking and Cancer. A Doctor's Report. By Alton Ochsner, M.D. New York, Julian Messner, [c. 1954]. 8vo. 86 pages, illustrated. Cloth, $2.00.

Laboratory Techniques in Rabies. By D. d'Antona, P. Atanasiu, R. Béquignon, E. Falchetti, **et al.** Geneva, Switzerland, World Health Organization, (New York, International Document Service, Columbia University Press), [1954]. 8vo. 150 pages, illustrated. Cloth, flexible, $4.00. (World Health Organization Monograph Series #23)

General Biochemistry. By Joseph S. Fruton, Ph.D. & Sofia Simmonds, Ph.D. New York, John Wiley & Sons, [c. 1953]. 8vo. 940 pages, illustrated. Cloth, $10.00.

The Adolescent Exceptional Child, a Realistic Approach to Treatment and Training. Proceedings of the 1954 Spring Conference of the Child Research Clinic of the Woods Schools, held in New Orleans, Louisiana, April 9 and 10, 1954. Langhorne, Pa., The Woods Schools, [1954]. 8vo. 79 pages. Paper. Gratis on request.

Investing For The Successful Physician

Prepared especially for Medical Times by Merrill Lynch, Pierce, Fenner & Beane, underwriters and distributors of investment securities and brokers in securities and commodities.

SELECTED BONDS AND PREFERRED STOCKS

After the almost uninterrupted 150-point rise in the Dow Jones averages since September, 1953, an abrupt January decline, accompanied by the first 5 million share day since 1939, caused much comment as to whether the market was too high, and front page stories drew the inevitable comparisons with 1929. Since then the market has quickly recovered and the Dow Jones industrial averages are making at this writing still newer highs above the 410 level.

But basically there appears to be very little similarity between now and 1929. It is true that prices are historically high but the rise appears to be well justified by the tremendous rise in our national economy on all fronts. Prices appear adequately supported by corporate earnings and dividends. Common stock yields are still attractive relative to bond yields even though the advantage for stocks has been reduced. There is still no over-extension of credit in the stock market. In fact, relatively more important expansion has occurred in consumer credit and mortgages.

An interruption of the rise in stock prices was in all probability overdue. The market is not a one-way street and some profit-taking at this point should not have been surprising. It is quite probable that profit-taking would have occurred sooner and the 1954 advance would have been slower but for the capital gains tax. Many investors are reluctant to sell when they will have to pay a tax of 25% on their long-term gains. They reason that it is necessary to anticipate a decline of more than 25% of the paper profit before it is worth while taking that profit. This accentuates the upward trend.

The 1954 rise in stock prices took place while business was going through a mild recession and later a period of

stabilization. Improvement in business did not become obvious until the final quarter of the year. It will be recalled that economists in general forecast the 1954 pattern of business with rare accuracy. We now find that the professional forecasters are unanimously of the opinion that business will continue to improve, at least in the first half of 1955. However it would be unreasonable to expect stock prices immediately to resume their sharply upward rise of last year.

Much of the near term improvement in business has probably already been reflected by the rise in common stock prices. It has therefore become more difficult to select attractive issues. Almost all groups have participated to some degree in the advance. However some stocks are still available which have not participated fully in market improvement and which still should share in future economic growth. It is still possible to find issues which sell at a reasonable price-earnings ratio and which still return an attractive yield from current dividends. Certain issues in the oil, railroad, steel, food, department store and utility groups fall into this category. In the speculative field electronic (color TV) and airline (rising traffic) stocks have good prospects.

Fixed Income Securities While it is true that some such opportunities are available they are becoming ever more difficult to search out as the market continues to rise. Also while as time goes by some of today's prices may turn out to be bargains, they are nevertheless no longer the bargains they were a year or two ago.

For this reason prudent investors are giving renewed consideration to fixed

income securities, which ordinarily provide little opportunity for growth but at the same time are less vulnerable to any drastic sell-off in the securities markets.

These include bonds and preferred stocks, so-called senior securities. They are "senior" in the sense that they have claim to the company's earnings ahead of the common stock. Bonds, of course, represent a loan on the part of the bondholder to the company. The bondholder gets a fixed amount of annual interest, and his principal is returned intact when the bond matures (unless the company goes bankrupt). But except in a few speculative cases there is little or no hope of the bondholder seeing his investment appreciate. Excepted are bonds which sell at a discount from par, and convertible bonds (see MEDICAL TIMES, January Issue).

Preferred stocks represent ownership in the company, as do common stocks. But like the bondholder, the preferred stock investor is entitled only to a fixed return, usually slightly higher than the bondholder's in the same company because the preferred stockholder accepts more risk. The bond interest must be paid before a company can distribute earnings to preferred stockholders. Like bonds, preferred stocks are usually lacking in growth prospects. Exceptions are convertible preferred stocks, and those of highly marginal companies whose finances are so uncertain that continued payment of interest or preferred dividends appears endangered, and which therefore sell at a discount.

In general price movements of bonds and preferreds are much narrower than in the case of common stocks, and the "price risk" is said to be less. Bonds

SELECTED BONDS

Moody's Rating	Issue	Call Price	Approx. Price	Yield to Maturity
	Medium Term Bonds (5 to 15 Yrs. Maturity)			
BAA	Cortland Equip Lessors Inc 4½'s of 1969	104	102½	4.0%
——	Gen Motors Acceptance 2¾'s of 1964	101	99⅛	2.85
	Long Term Bonds			
	US Treasury 3's of 1995		100.12	2.99
AA	Amer Tel & Tel 3¼'s of 1984	105.52	103¼	3.08
A	Chesapeake & Ohio 3½'s of 1996	103½	102½	3.39
AA	Commonwealth Edison 3⅛ Debentures of 2004	103	98⅜	3.19
AA	Consumers Power 3¼'s of 1990	105.33	103½	3.09
AAA	General Motors 3¼'s of 1979	104¼	104⅛	3.01
AA	Kansas City Southern 3¼'s of 1984	105⅛	101½	3.17
AA	New York Telephone 3's of 1989	104.086	99½	3.02
AA	Pacific Gas & Electric 3⅛'s of 1984	104	101½	3.05
A	Tennessee Gas 3½'s of 1975	104.94	102¾	3.31
AA	World Bank 3¼'s of 1981	102½	101¾	3.15

SELECTED PREFERRED STOCKS

Issue	Call Price	Approx. Price	Yield to Maturity
Investment Grade			
Consolidated Edison $5	105	109¼	4.58%
duPont $4.50	120	120¼	3.74
El Paso Electric $4.50	109	109½	4.11
General Mills 5%	119	122⅜	4.09
International Nickel 7%	120	139	5.04
Northern States Power $4.11	105.73	101⅜	4.04
Union Pacific 4% ($50 par)	non-callable	51	3.86
Medium Grade			
Food Fair Stores $4.20	102	101⅜	4.13
Public Service Elec. & Gas $1.40	35	31	4.52
Safeway Stores 4%	102⅜	98	4.08
Tennessee Gas $5.10	105	106	4.81
Tide Water Assoc. Oil $1.20	30	27⅜	4.32
Lower Quality			
Burlington Mills 4½% 2nd Pfd	100	82¾	5.44
Celanese 4½% Conv. Pfd	105	81	5.56
Whites Auto Stores 5½% Conv. Pfd	26½	27½	5.00
Virginia Carolina Chemical 6%	105	136½	4.40

and preferred price levels are most affected by the level of interest rates—a slight price decline in future months may result from the large number of new bond issues coming to market.

Conclusion With the market for common stocks at historically high levels the prudent physician may wish to earmark a higher proportion of his investment for the senior security group. If he is in the high income brackets he will want to pay particular attention to the tax exempt features of municipal bonds (which we discussed in the May, 1954 issue).

The table presents some idea of current opportunities among fixed income securities. Long term bonds are available at about a 3% yield. Investment grade preferreds may be had which yield more than 4%. The lower grade preferreds offer yields of 5% and more, at some sacrifice of quality and in return for accepting a certain higher degree of risk.

The table is largely self explanatory. An explanation of Moody's ratings is given in any Moody's Bond Manual, available at the library or your broker's office. The call price represents the price at which the company may "buy in" all or part of the issue.

"My only advice to you Gilliams is to take the pins out of the map and stick them into the detail men."

Tips on Selecting A Collection Agency

BARBARA MASTERS
San Francisco, California

There is hardly a physician in practice today who doesn't sometimes view his mounting stack of unpaid accounts, and wistfully wish for some of the centuries-old methods of getting back his money. To "clap one in irons and throw him in the Fleet" as the ancient lawbooks suggest for delinquent debtors, is a bit impractical.

Aggressive collection procedures are not considered the best public relations today. In fact, even some ordinary civil actions against patients are frowned on by many members of the profession. This leads the practitioner into a somewhat troublesome dilemma. That is, because he is unable and sometimes unwilling to collect his own accounts, he must either allow substantial sums to slip away, or engage the services of a professional collection agent to help him.

The big question is, are such agents in a position to recover the doctors' money without undue harassment of the patients owning it? The answer is *yes—if* the doctor or his medical secretary will be careful to observe a few fundamental principles. These are: (1) Selection of a reputable, local collector who should be a member of one of the three nationally recognized collectors' organizations. (2) Avoidance of "cut rate" operators or unorthodox "financing" or "bad debt purchasing" arrangements. (3) Full discussion with the collector in advance of employment, to work out policies and methods to be followed in the handling of his accounts.

Although collection agency methods are pretty well standardized, there is considerable difference in applications, depending on types of accounts, age, geographical, economic, and even socio-political factors. So the doctor should know and understand the procedure to be followed, and conversely, the collector should know what is expected of him policy-wise.

Because their expenses and profits are directly geared to operating efficiency, some professional people expect collectors to be a fairly tough, sharp bunch of opportunists. Years ago there was basis for that belief. In Grandfather's day the bill-adjuster might make his calls with a horse and buggy bearing the big bold legend, "*Bad Debt Bureau.*" But today's col-

FOR YOUR PATIENTS WITH POST-INFECTION NEURITIS

USE

PROTAMIDE

PROMPTLY

for faster,
surer recovery
without relapse

In post-infection neuritis (following upper respiratory or virus infection), one ampul of Protamide daily for five days has been shown to produce complete recovery without relapse in 85% of patients when treatment was started during the *first week of symptoms.**

You can count on comparable results in your own practice when you

USE PROTAMIDE FIRST

for patients with post-infection neuritis, herpes zoster and certain other nerve root pain problems.

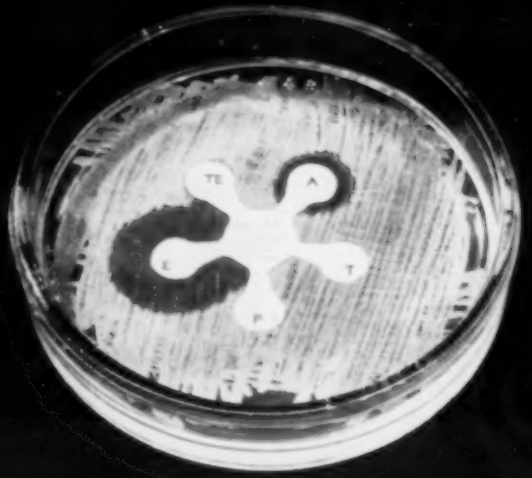
Pharmacologically safe and clinically assayed, Protamide is a sterile colloidal solution prepared from animal gastric mucosa. Due to an exclusive, unique denaturing process, protein reaction cannot be demonstrated with Protamide although it is of protein origin.

The solution is straw colored with an adjusted pH of 5.9. It is virtually painless on administration and is used intramuscularly only.

Protamide is stable at room temperature and is packaged in 1.3 cc. ampuls in boxes of ten.

*Smith, R. T., New York Med. 8:16, 1952.

against staphylococci



This is an actual strain of *Staphylococcus aureus*, isolated from a five-week-old infant. Note extreme sensitivity of the organism to ERYTHROCIN—although it easily resists the four other antibiotics. This organism may be associated with *sinusitis . . . otitis media . . . tonsillitis . . . abscess . . . bronchopneumonia . . . empyema . . . carbuncle . . . pyoderma . . . bronchiectasis . . . furunculosis . . . pharyngitis . . . septicemia . . .* and *tracheobronchitis.*

for specific therapy against coccic infections . . .

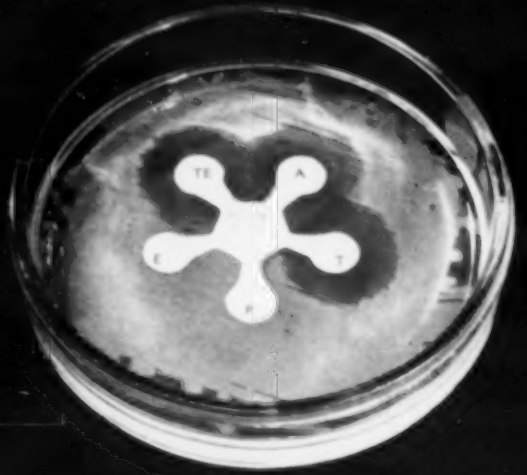
Wide range activity against gram-positive pathogens—that's the story of ERYTHROCIN *Filmtab*®. As you know, most bacterial respiratory infections are produced by staph-, strep- or pneumococci. *And that is the very range where* ERYTHROCIN *is most effective.* In fact, you'll find it more active against this group of organisms than many other antibiotics.

filmtab®

Erythrocin® STEARATE

(ERYTHROMYCIN STEARATE, ABBOTT)

against common intestinal flora



This sensitivity test shows ERYTHROCIN and the same antibiotics against a typical strain of *E. coli*. Note that ERYTHROCIN and penicillin do not affect growth of the organism—while the other antibiotics show marked inhibitory action. Since ERYTHROCIN is inactive against gram-negative organisms, it is less likely to cause alteration in common intestinal flora—with an accompanying low incidence of side effects.

...with little risk of serious side effects

One reason is because the drug acts specifically.
It destroys coccic invaders, yet doesn't materially disturb
the normal intestinal flora. Thus, side effects
rely encountered with ERYTHROCIN. Nor does
allergic reactions
occasionally seen with penicillin. Abbott

filmtab*

Erythrocin® STEARATE

(ERYTHROMYCIN STEARATE, ABBOTT)

*TM FOR ABBOTT'S FILM COATED TABLETS. PAT. APPLIED FOR

lectors are regulated by law, and the American Collectors Association Code of Ethics forbids them from employing any ruthless, oppressive, or unconscionable tactics.

Constructive Approach Half a century ago, anyone with a loud voice and plenty of brass could jump into the business with a handful of accounts. He needed only desk space, letterheads, and a few nickels for streetcar fare. "Today," says "Challenge," a magazine published by the Institute of Economic Affairs of New York University, "the picture has changed."

"Old-time collectors would be amazed —even shocked—" the magazine says, "at some of the newfangled ideas now being employed. The new practitioners have borrowed techniques from the social scientists. They know that most non-payment of debt is due to mismanagement of income. . . . Personal interviews are often supplemented by pamphlets, brochures and magazine reprints* published by the ACA's Educational Council. These tell the story of credit and suggest ways and means of stretching dollars further."

Is credit education a practical approach to the collection of past-due bills? Leading collection specialists say "yes." They point to the fact that although many more accounts are being handled today, the percentage of lawsuits filed by agencies or referred to creditors for suit, has dropped.

One agency conducted a year-long experiment, using a single type of account. The only change in procedure was to enclose pamphlets on credit and budgeting with its regular mailings. Gross collections during the test year jumped well over 100%—a nice recovery for creditors.

Why Don't They Pay? There are several main reasons why people don't pay their bills, and one of the most important is failure to understand budgeting and responsibilities. Every year young people graduate from high schools, find jobs, marry, and start raising families. Few have any practical financial training. They have a normal—perhaps even an abnormal—desire for nice things *now*. Some manage to make out.

But too many are like the young couple who married at nineteen and decided to "live right." Both worked, and they had almost $400 a month in take-home pay. They were paying on

* Copies available from American Collectors Association national office, 50th & Ewing Avenue South, Minneapolis, Minn.

new more comprehensive • more effective

RAUWOLFIA COMBINATION THERAPY of hypertension

and hypertensive symptoms

RAU-PERTENAL®

for faster, surer, safer control in the office patient than with any single drug

Each capsule-shaped, green **RAU-PERTENAL** tablet contains:

Rauwolfia Serpentina, standardized whole root	50 mg.
Veratrum Viride Ext., eq. to whole drug	75 mg.
Mannitol Hexanitrate	30 mg.
Homatropine Methylbromide	2.5 mg.

DOSE: 1 tablet 3 or 4 times a day, preferably after meals.

SUPPLY: Bottles of 50, 100 and 500 tablets.

A NEW HIGH IN SAFETY RAU-PERTENAL therapy is virtually worry-free; it will not produce any serious side-effect. Even veratrum nausea is reduced to a minimum because of minimum dosage.

A NEW COMPREHENSIVE EFFICACY Pressure is rapidly established and maintained at safer levels . . . distressing symptoms are promptly relieved . . . general tension is relaxed.

A NEW SMOOTHNESS OF RESPONSE Pressure is reduced gently, smoothly, without sudden, violent, frightening changes.

A NEW SENSE OF WELL-BEING is induced by RAU-PERTENAL. It has a marked mood-brightening effect—restores to patients a sense of well-being, comfort and normality.

Why not write for **samples** *of new* RAU-PERTENAL *and literature now*

CROOKES LABORATORIES, INC.
Therapeutic Preparations for the Medical Profession
MINEOLA, NEW YORK

Crookes

a used car, a $300 refrigerator, $139 bedroom set, new $250 stove, $200 worth of clothes, a $75 vacuum cleaner, and a $235 engagement-wedding ring set.

They scraped by—until the young wife found she was going to have a baby. But hers was a complicated pregnancy, and cost far more than they'd expected. With additional expenses, and without the wife's earnings, they found themselves badly behind with their bills.

It was only after receiving financial counselling from a sympathetic collector that they realized they'd have to give up the car, return some of the merchandise, and move to cheaper quarters. Finally, by firm self-discipline and denial, they were able to dig out of the red and resume living on a less luxurious but more realistic basis.

Obviously, the doctor or other creditor must be protected, and the collection agent cannot always be liberal in arranging easy payment terms. But modern collectors do what they can to retrieve the money as painlessly as possible—and, as one commentator expressed it, "can help to impress the importance of financial responsibility upon those who have not learned it. They help such people re-establish themselves on a more secure plane. In doing this, collection agencies help assure the stability of the credit system itself."

690 Market Street.

"We won't need you now, Doctor . . .
He's better."

ELECTRON PHOTOMICROGRAPH

Escherichia coli 35,000 X

Escherichia coli ("colon bacillus") is a Gram-negative organism
commonly involved in

urinary tract infections and peritonitis,
and is an important etiologic agent of otitis media, mastoiditis, enteritis,
and septicemia in infants.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

HCl

TETRACYCLINE HYDROCHLORIDE

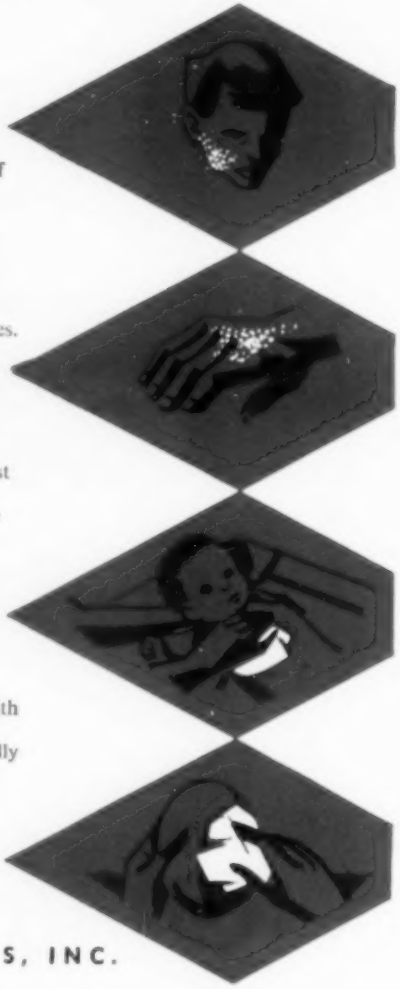
100 mg. and 250 mg. capsules
125 mg./tsp. and 250 mg./tsp. oral suspension (Panmycin Readimixed)

Upjohn

*TRADEMARK

When Soap is Contraindicated

...Cleanse Sensitive Skin Effectively without Irritation



Acidolate

a non-lathering sulfated oil detergent, is the hypoallergenic skin cleanser of choice when a liquid emulsifying agent of low surface tension is required. It is an excellent cleansing agent in acne vulgaris, for removal of ointment and greases from the skin, hair or wounds, and as a shampoo for ringworm of the scalp.

Supplied: 8 fluid ounce and 1 gallon bottles.

Dermolate

"Milder than the mildest castile," a nonirritating detergent in cake form, is an ideal cleanser where even the mildest soap is poorly tolerated. It is ideally suited for routine use as a hypoallergenic skin cleanser; especially recommended for normal skin care of infants and young children.

Supplied: 4 ounce cakes.

Terjolate

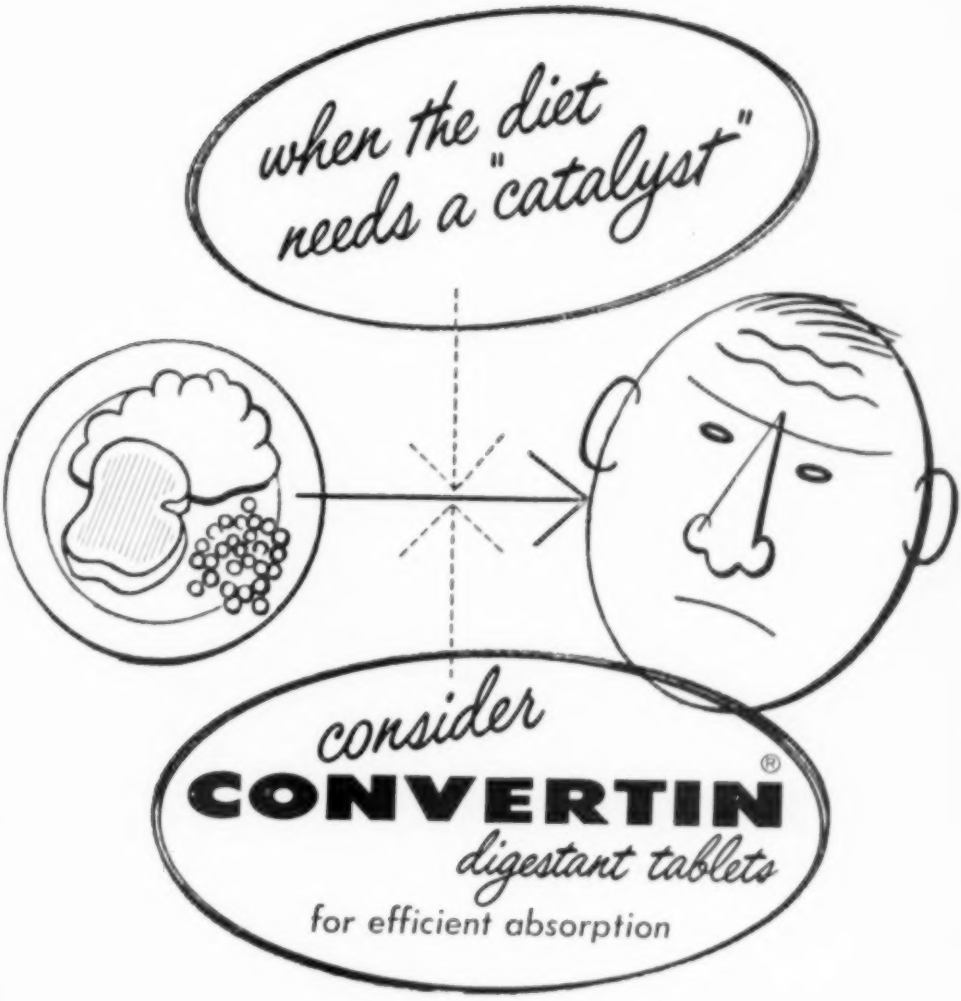
a household cleanser designed for use with Acidolate and Dermolate, is neither irritating nor sensitizing—it is an unusually effective cleanser for all household purposes.

Supplied: 8 and 16 fluid ounce and 1 gallon bottles.

White's

WHITE LABORATORIES, INC.

KENILWORTH, N. J.



When your geriatric, dyspeptic, underweight, or gallbladder patient doesn't respond to diet, the cause is frequently an inability to *utilize food*.

CONVERTIN furnishes the dietary catalysts necessary for efficient absorption in these individuals.

The specially layered construction of CONVERTIN provides selective release of ingredients to assure efficient absorption in the stomach and small intestine.

Each CONVERTIN Tablet provides:
a sugar-coated outer layer of:

Betaine Hydrochloride (Provides 5 minims Diluted Hydrochloric Acid U.S.P.)	130.0 mg.
Oleoresin Ginger	1/600 gr.

Surrounding an enteric-coated core of:

Pancreatin (Equiv. 250 mg. U.S.P.)	62.5 mg.
Desoxycholic Acid	50.0 mg.

DOSAGE: One or two tablets with or just after meals.

SUPPLIED: In bottles of 24 and 500 tablets.

B. F. ASCHER & COMPANY, INC.
Ethical Medicinals
KANSAS CITY, MISSOURI

IT'S REALLY *delicious*
—AND THAT'S HALF THE TREATMENT

DRAMCILLIN-300 SUSPENSION

—is a delicious pink, creamy, lime-vanilla flavored suspension of the ideal oral penicillin, potassium penicillin G, which maintains its penicillin potency for two years without refrigeration.

DRAMCILLIN DOSAGE FORMS:

Dramcillin-300 Suspension 300,000 units* per teaspoonful (5 cc
Dramcillin-250 250,000 units* per teaspoonful
Dramcillin 100,000 units* per teaspoonful
Dropcillin 50,000 units* per dropperful (0.75 cc.)
Dramcillin with Triple Sulfonamides
Dramcillin-250 with Triple Sulfonamides

*Buffered crystalline potassium penicillin G

WHITE LABORATORIES, INC., *Kenilworth, N. J.*

MODERN THERAPEUTICS

Abatement of Anginal Symptoms in Peripheral Vascular Disease

In a report entitled "Experiences in Treating Coronary and Peripheral Vascular Diseases," *N. J. State J. of Med.* [54:3396 (1954)], Dr. Harry S. Friedlander relates how sixteen patients with angina and coronary insufficiency and coronary thrombosis and four with peripheral vascular disease were treated with Tensodin and observed over a period of eight months. Dr. Friedlander states that while this series is too small to draw more than purely tentative conclusions, it would seem that the results in this series of patients treated wtih Tensodin have been better than those obtained with papaverine, aminophylline, or nitroglycerin combinations in patients with similar symptoms. When placed on Tensodin, one or two tablets three times a day, most patients showed an abatement to the anginal symptoms with less dyspnea and greater tolerance for exercise, and the patients with peripheral vacular disease were able to walk greater distances with less discomfort and pain. Side-effects were rarely seen and consisted only of transient mild anorexia and nausea. Tolerance to the drug was not observed.

The Prevention of Contact Dermatitis

M. N. Winer *(New York State Journal of Medicine 54*:2591, Sept. 15, 1954) reports the use of Pro-Derna, a cream containing 52.5 per cent of silicone, in the prevention of contact dermatitis in 36 housewives, 5 nurses and 6 secretarial workers, all of whom were exposed to the same type of "contactant"; in 23 industrial workers, and in 14 children. In the first group 41 were protected from the development of contact dermatitis, and 6 were not protected. In 15 of the 23 industrial workers, Pro-Derna prevented recurrence of the dermatitis on continued exposure to the same contact irritants; but failed to give protection in 8 workers. In the group of 14 children, Pro-Derna gave good results in 11 cases, and failed to prevent contact dermatitis in 3 cases. Pro-Derna should not be applied when the skin is acutely inflamed or infected; hyshydrosis was also found to be a contraindication to its use. Pro-Derna causes no irritation of the skin and there has been no evidence of sensitization. The author is of the opinion that silicones should be studied, especially for use in industry.

German Report on Vitamins in Cancer Therapy

Frequent improvement in the general status of cancer patients after administration of massive daily doses of Vita-

—Continued on page 1064

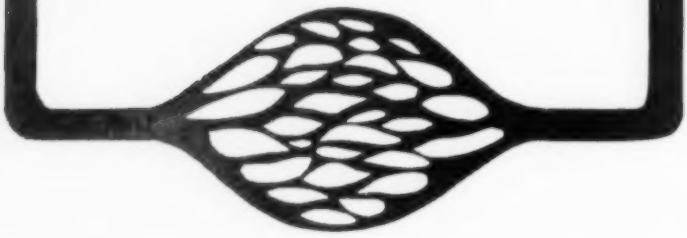
you can duplicate these results in control of bleeding . . .

Conclusions from a 1954 report on KOAGAMIN in the American Journal of Surgery

rapid	acts promptly—usually with 1 or 2 injections
safe	no untoward effects in over 11 years' use
prophylactically	facilitates surgical procedures tends to reduce blood loss
therapeutically	particularly valuable in general oozing fully compatible with vitamin K
saves blood	often obviates use of transfusions

Joseph, M.: Am. J. Surg. *87*:905, 1954

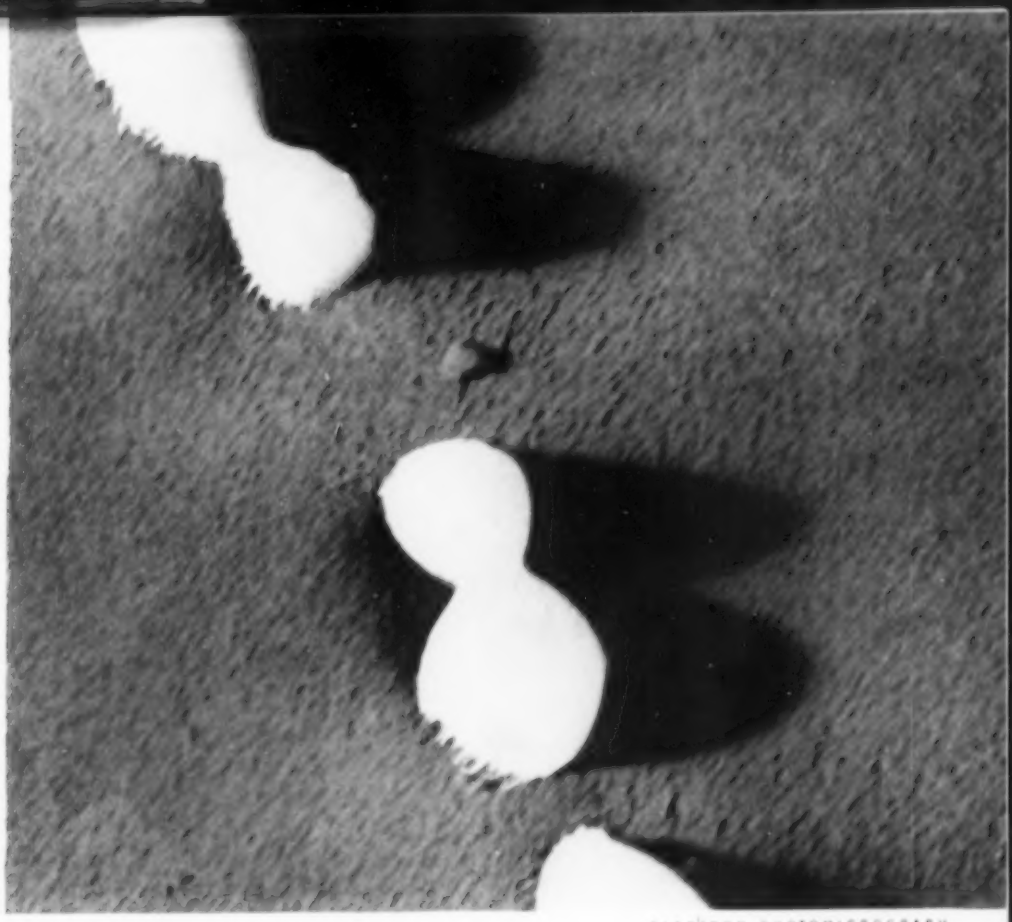
KOAGAMIN® ***parenteral hemostat***



KOAGAMIN, an aqueous solution of oxalic and malonic acids for parenteral use, is supplied in 10-cc. diaphragm-stoppered vials.

Chatham

CHATHAM PHARMACEUTICALS, INC.
901 Broad Street, Newark 2, New Jersey



ELECTRON PHOTOMICROGRAPH

Streptococcus pyogenes 31,000 X

Streptococcus is a Gram-positive organism commonly involved
in a great variety of pathologic conditions, including
scarlet fever • tonsillitis • pharyngitis • otitis media • sinusitis
bronchopulmonary disease • pyoderma • empyema • septicemia • meningitis
mastoiditis • vaginitis • rheumatic fever • acute glomerulonephritis

It is another of the more than 30 organisms susceptible to

PANMYCIN* HCl

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

125 mg./tsp. and 250 mg./tsp. oral suspension (Panmycin Readimixed)

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

—Continued from page 103a

mins C and A over long periods is reported by Dr. Erich Schneider of Lahr Hospital in *Deutsche medicinische Wochenschrift* [79:584(1954)]. Unremovable tumors are often reduced in size, erythrocyte sedimentation rates tend to approach normal, and the patient gains weight. Dr. Schneider describes the procedure as harmless.

Vasopressors Successful in Surgical Shock

A two-year study has demonstrated the vasopressor drugs Levophed and Neo-Synephrine to be "markedly successful" in the treatment of surgical shock at the Hertzler Clinic here, according to Dr. J. W. Welch.

Reporting in the *American Journal of Surgery* [88:922(1954)], he states that 50 patients who were victims of surgical or neurogenic shock were treated with Levophed or Neo-Synephrine, or both. All 30 patients given intravenous infusions of Levophed "showed a positive and substantial pressor effect." In 28 of the 30 cases, Dr. Welch notes, transfusions, oxygen, intramuscular vasopressors and other supportive measures were administered prior to Levophed. The latter was given immediately in the remaining two cases because "shock was so precipitate and profound."

All but five of 20 patients in surgical shock given Neo-Synephrine showed satisfactory pressor responses. In each instance in which the pressor response was inadequate, the author states, Levophed was started "with a prompt and adequate response." After several hours, Neo-Synephrine was resumed and was able to maintain blood pressure at adequate levels.

Dr. Welch observes that "Neo-Synephrine has proved a valuable agent in prophylactic therapy of shock." The drug was started before shock developed in eight patients believed to be shock-prone, and was continued for several hours after surgery "with excellent results."

—Continued on page 110a

Oh, Doctor!

You said that I must diet
And lose a lot of weight,
That with a lissome figger,
Perhaps I'd find a mate.

You said if I dropped pounds
I'd drop my hypertension,
Enlargement of the heart
And gross midline extension.

You said I overeat;
Look like a hippopotamus.
You said it was a habit
And not my hypothalamus.

You said my appestat
Must be screwed down ten notches;
That then a lettuce leaf
Would equal steak and scotches.

You said I would not mind
A low caloric slide.
You said there'd be rewards.
Oh, Doctor, how you lied!

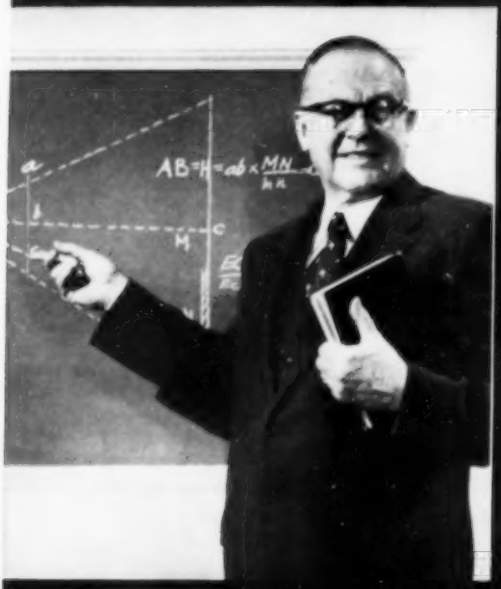
LUCILE GREBENC

Pyridium®

(PHENYLAZO-DIAMINO-PYRIDINE HCl)

Gratifying relief from urogenital discomforts *in a matter of minutes*

KEY ADVANTAGES: Rapid-acting, nontoxic urinary analgesic. No systemic effects. Compatible with sulfonamides and antibiotics.



FOR COMFORT
ON THE JOB . . . AND AT PLAY

EFFECTIVE—In a study of 118 cases of pyelonephritis, cystitis, prostatitis and urethritis,[1] PYRIDIUM relieved or abolished dysuria in 95% of the patients and greatly reduced or abolished frequency in 85% of the cases.

NONTOXIC—PYRIDIUM produces rapid and entirely local analgesia of the urogenital mucosa. It may be administered in conjunction with sulfonamides or antibiotics to relieve distressing urogenital symptoms in the interval before the antibacterials can act.

PHYSIOLOGICAL—The soothing analgesic action of PYRIDIUM promotes relaxation of the sphincter mechanism of the bladder. This relaxation helps the patient to overcome urinary retention of spastic origin.

PSYCHOLOGICAL—PYRIDIUM imparts a characteristic orange-red color to the urine. This color-change gives patients added assurance of prompt action of the drug.

SUPPLIED: In 0.1 Gm. (1½ gr.) tablets, vials of 12 and bottles of 50, 500, and 1,000.

PYRIDIUM is the registered trade-mark of Nepera Chemical Co., Inc., for its brand of phenylazo-diamino-pyridine HCl. Sharp & Dohme, Division of Merck & Co., Inc., sole distributor in the United States.

SHARP & DOHME
PHILADELPHIA 1, PA.
DIVISION OF MERCK & CO., INC.

REFERENCE: 1. Kirwin, T. J., Lowsley, O. S., and Menning, J., Am. J. Surg. **62**:330-335, December 1943.


heap big
AUR

medicine! heap good taste!

AUREOMYCIN SYRUP

Many a young Indian has taken his medicine and liked it because the doctor specified AUREOMYCIN CALCIUM SYRUP, a mildly sweet suspension with a delicate lime flavor.

Its potency of 125 mg. per teaspoonful (4 cc.) enables you to prescribe a specific dose to fit the patient—one which the parent can administer with accuracy. The syrup retains its potency for a year, and needs no refrigeration.

Long, widespread use has proved AUREOMYCIN to be a well-tolerated, broad-spectrum antibiotic promptly effective against a great variety of infections. Next time the patient is a young and wild one—remember AUREOMYCIN SYRUP!

Dosage forms for every medical requirement.

EOMYCIN*

Chlortetracycline Lederle

LEDERLE LABORATORIES DIVISION *American Cyanamid Company* PEARL RIVER, NEW YORK

Lederle

*REG. U. S. PAT. OFF.

MODERN THERAPEUTICS

—Continued from page 106a

Normal Functions Not Disturbed in Urinary Tract Treatment

Normal liver and kidney function are not affected by treatment of urinary tract infections with Furadantin, report Dr. R. V. Ford and Dr. N. S. R. Maluf of Baylor University College of Medicine and the Veterans' Administration Hospital, Houston, Tex., in *Journal of Urology* [72:959(1954)].

The authors describe a battery of kidney and liver-function tests which they administered to 8 patients before and after Furadantin therapy. In no case was the normal function disturbed, while one patient "showed a marked improvement in the discrete renal functions. . . ."

—Continued on page 114a

Diagnosis, Please!

ANSWER

(from page 25a)

CALCIFIED GALLBLADDER WALL AND STONES

There is a crescentic calcified border due to calcification in gallbladder wall. There are stones within this border of calcium.

Single Tablet Combination Therapy in Hypertension

GREATER EFFICACY FROM SMALLER DOSAGE

SIDE ACTIONS FEWER AND OF LESSENED INTENSITY

NO COMPLICATED DOSAGE SCHEDULES

SIMPLER PATIENT MANAGEMENT

RAUWILOID® + VERILOID®

Indicated in moderately severe hypertension and in cases not responding to Rauwolfia alone. The combination containing Rauwiloid 1 mg. and Veriloid 3 mg. permits better tolerated doses of Veriloid to exert full hypotensive effect and leads to rapid symptomatic relief, while the contained Rauwiloid provides a tranquil sense of well-being. Initial dose, 1 tablet t.i.d., p.c. In bottles of 100.

RAUWILOID® + HEXAMETHONIUM

When ganglionic blockade is called for in rapidly progressive, otherwise intractable hypertension, Rauwiloid + Hexamethonium (each tablet containing 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate) serves with greater efficacy and greater safety. The combination provides smoother, less erratic response to hexamethonium and permits greatly reduced dosage of the latter drug (up to 50% less). Initial dose, ½ tablet q.i.d. In bottles of 100.

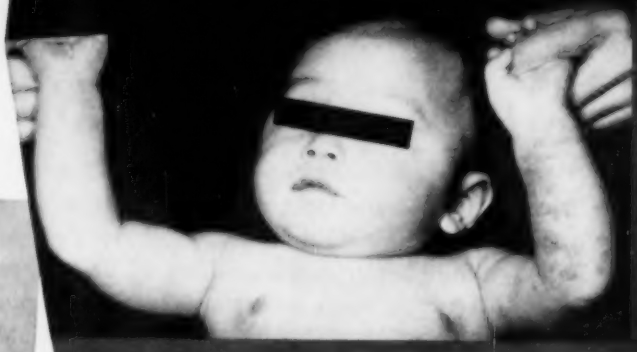
Riker LABORATORIES, INC., LOS ANGELES 48, CALIF.

a new topical therapy with 25 times the anti-inflammatory, antipruritic potency of hydrocortisone[1]

florinef acetate

(Squibb Fludrocortisone Acetate Ointment and Lotion)

Ointment
Lotion



Condition after one week of therapy using Florinef Ointment on the right arm and hydrocortisone ointment on the left arm.

RESULTS OF TREATMENT WITH FLORINEF[2]

Diagnosis	Number of patients	Definite benefit	No change
Severe sunburn	3	3	
Atopic dermatitis	10	10	
Contact dermatitis	7	6	1
Intertrigo	4	4	
Pruritus vulvae	6	6	
Pruritus ani	4	2	2
	34	31	3

Florinef Ointment, 0.1 and 0.2 per cent, is supplied in 5 gram and 20 gram collapsible tubes.

Florinef Lotion, 0.1 and 0.2 per cent, is available in 15 cc. plastic squeeze bottles.

1. Sternberg, T., Graham, J., and Newcomer, V. D.: Personal communication.
2. Robinson, R. C. V.: In press (J.A.M.A.)

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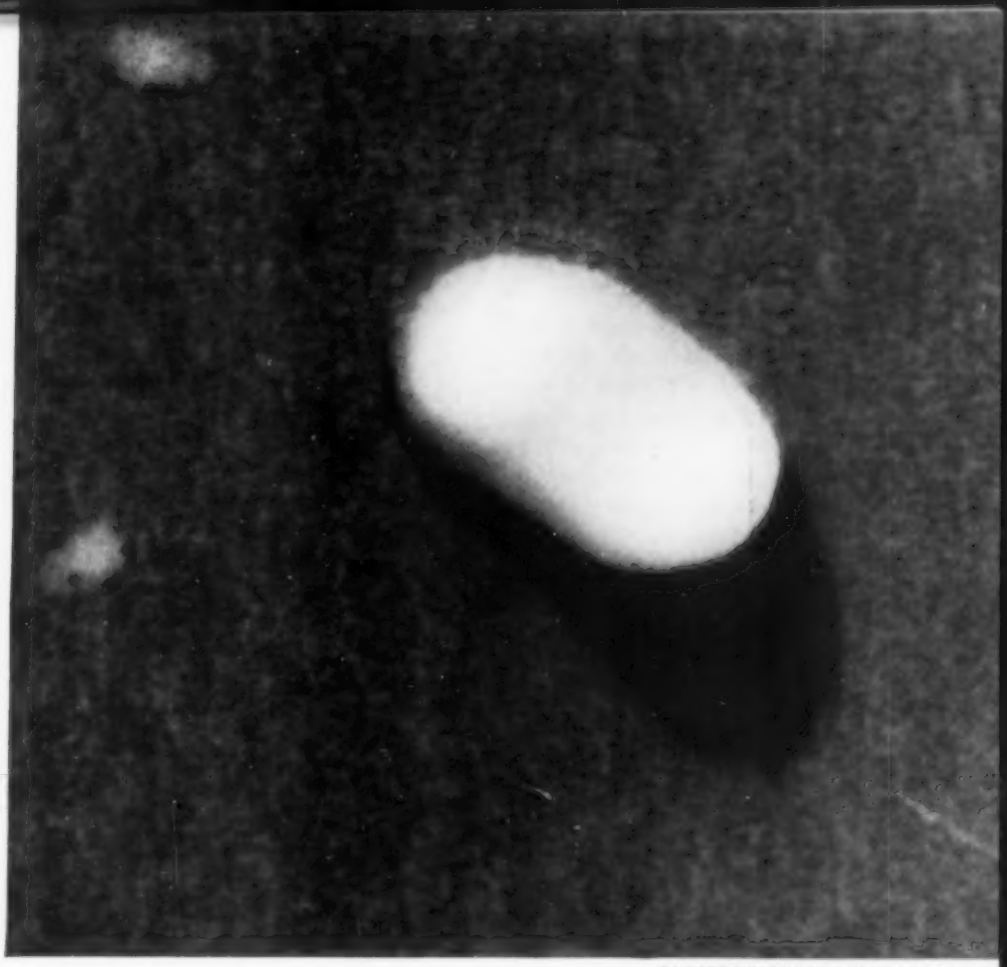
A NAME YOU CAN TRUST



ELECTRON PHOTOMICROGRAPH

Aerobacter aerogenes 35,000 X

Aerobacter aerogenes (Bacillus lactis aerogenes) is a methyl red-negative, gas-forming organism which, although found in the normal intestine, is commonly involved in urinary tract infections and peritonitis.

It is another of the more than 30 organisms susceptible to

PANMYCIN* HCl

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

125 mg./tsp. and 250 mg./tsp. oral suspension (Panmycin Readimixed)

*TRADEMARK, REG. U. S. PAT. OFF.

Upjohn

MODERN THERAPEUTICS

—Continued from page 110a

Penicillin in Venereology

"The pre-eminence of penicillin in the treatment of gonorrhoea and syphilis has become increasingly apparent," says Dr. G. L. M. McElligott in an article in the *Practitioner of London* [*174*:70(1955)]. He points out that there is still no certain evidence that penicillin-resistant treponemes or gonococci are in circulation.

The *T. pallidum* is more sensitive to penicillin than most organisms, but it would appear that treponemes must be exposed to its action between five and 14 days. According to the authors, procaine penicillin in oil with two per cent of aluminum monostearate (P.A.M.) has so far proved to be the most suitable preparation for the treatment of syphilis in all its stages. In early contagious syphilis an initial dose of 1.2 or even 2.4 million units may be given. Single doses of this size will render the patient non-infectious, and will cure the disease in a high proportion of cases. The following regimen of treatment is suggested for early contagious syphilis: first day, P.A.M., 2.4 million units; third to tenth days, P.A.M., 600,000 units daily; fourteenth day onward, consolidation treatment (probably unnecessary) and P.A.M., 900,000 units twice weekly for five weeks.

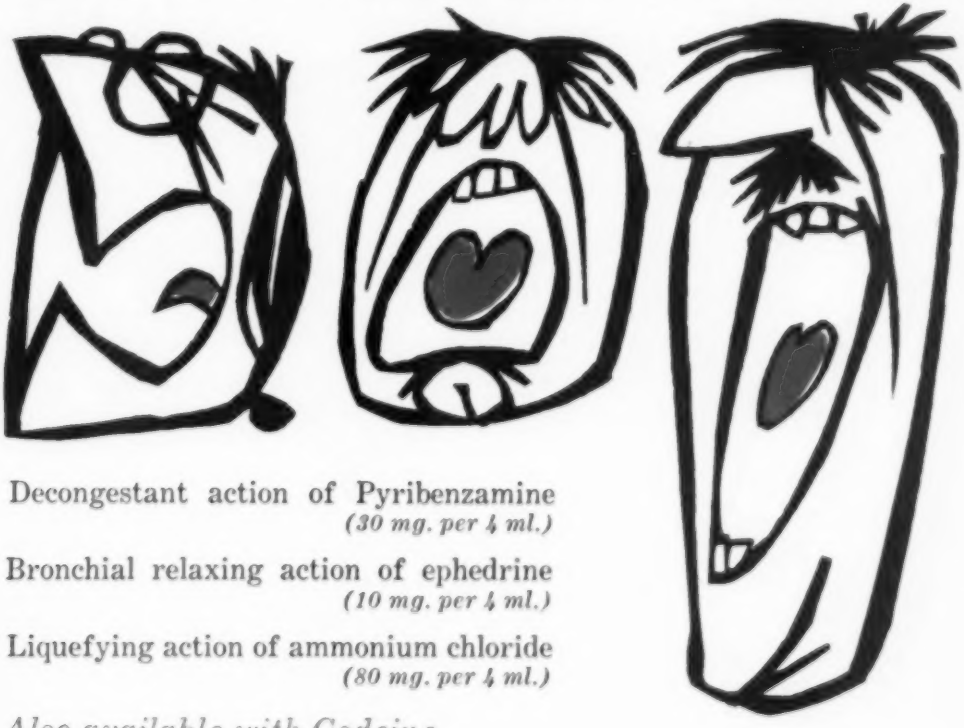
Careful clinical examination, diagnostic lumbar puncture and radiography of the heart and great vessels should always precede the treatment of

—Continued on page 120a

coughing patients need

Pyribenzamine®

Expectorant with Ephedrine for



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(30 mg. per 4 ml.)

Bronchial relaxing action of ephedrine
(10 mg. per 4 ml.)

Liquefying action of ammonium chloride
(80 mg. per 4 ml.)

Also available with Codeine
(8 mg. per 4 ml.)

Pyribenzamine® citrate (tripelennamine citrate CIBA)

CIBA
SUMMIT, N. J.

. . . no two hypertensives are alike

A. C. can't get along without Rauvera

Diagnosis: Fixed Essential Hypertension, Grade III

A. C.: Male, Negro, 31. Blood pressure 225/145. Pulse rate 110. Excited, headaches, dizziness. Got good but not optimal reductions with Rautensin after 7 weeks, was therefore put on ***combination therapy***—Rauvera, 4 tablets daily at 4-hour intervals after meals. (Each tablet contains 1 mg. mixed purified Rauwolfia alkaloids—the alseroxylon fraction—and 3 mg. mixed Veratrum alkaloids—alkavervir.) This accomplished a prompt additional reduction of B. P. to 125/80 and of pulse rate to 84. Dizziness, headaches and excitability disappeared.

Your hypertensive patients with a similar history will respond well to Rauvera.

Rauvera® is a DORSEY preparation. Supplied in bottles of 100, 500, and 1,000 tablets.

Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Company

A. C. can't get along without Rauvera . . . for no two hypertensives are alike.

is it a treatable anemia?

prescribe ROETINIC*

ONE CAPSULE DAILY

Each ROETINIC capsule
(one daily dose) contains:

Intrinsic Factor-Vitamin B_{12} Concentrate	1 U.S.P. Oral Unit
Folic Acid	2 mg.
Ferrous Sulfate, Exsiccated	400 mg.
Ascorbic Acid	100 mg.
Molybdenum	1.5 mg.
Cobalt	0.5 mg.
Copper	0.5 mg.
Manganese	0.5 mg.
Zinc	0.5 mg.

Bottles of 30 and 100
Prescription only

Only one-a-day hematinic which conforms to exact U. S. P. requirements for Intrinsic Factor-B_{12}, as defined by the Anti-Anemia Preparations Advisory Board.

Only one-a-day hematinic which contains therapeutic amounts of all known hemapoietic factors, including the "four extra essentials."

*Trademark

ROERIG Rx CHICAGO 11, ILLINOIS

. . . no two hypertensives are alike

B. D. needs Rautensin

Diagnosis: Hypertension, Grade II, labile

B. D.: Female, white, 62. Average blood pressure 220/115, pulse: 95. Irritable, sleeps poorly. Placed on twice average dose of Rautensin—4 tablets per day in two doses, after luncheon and at bedtime. Each tablet contains 2 mg. of purified Rauwolfia alkaloids—alseroxylon fraction. After 12 weeks the gradual reduction of her readings reached satisfactory levels. Blood pressure 155/90, pulse 80. She now sleeps well, is no longer irritable; occasionally takes an extra cup of coffee if the sedative effect is too pronounced. No postural hypotension encountered.

Rautensin* is a DORSEY preparation. Supplied in bottles of 100, 500, and 1,000 tablets.
Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Company

*TRADE MARK

B. D. needs Rautensin . . . for no two hypertensives are alike.

—Continued from page 114a

late or latent syphilis, after which a course of P.A.M. similar to that recommended for early syphilis should be given.

In congenital syphilis, 2.4 to 6.0 million units of P.A.M. will almost always ensure that the child of a syphilitic woman will be born free from disease, even though treatment is begun during the last weeks of pregnancy. In infantile congenital syphilis, the author uses a total of 1.8 million units of P.A.M. given in twelve daily injections of 150,000 units.

In gonorrhea, 300,000 units of P.A.M. in one injection frequently cures the condition. Relapses may occur, however, and secondary infection is not uncommon.

Non-gonococcal urethritis, venereal in origin, rarely responds to penicillin. Although *H. ducreyi*, the casual organism of chancroid, is not considered to be penicillin-sensitive, non-syphilitic genital ulceration of uncertain etiology will often respond to moderate dosage. Penicillin is also ineffective in lymphogranuloma venereum and in granuloma venereum.

Bell's Palsy Treated with Cortisone

After reviewing the comparatively small number of cases in which Bell's palsy has been treated with cortisone, Carl E. Cassidy and Louis Karnosh, in the *Pennsylvania Medical Journal* [*57*: 1170 (1954)], report discouraging results with the use of cortisone in the case of three of their patients in whom the condition was chronic, and outline briefly case reports of five patients in

—Continued on page 124a

. . . no two hypertensives are alike

F. E. does best on Crystoserpine

Diagnosis: Hypertension, Grade III, fixed

F. E.: Male, white, 39. Blood pressure 210/130, pulse rate 84. Agitated, neurotic. Given Crystoserpine (crystalline reserpine) 0.5 mg. q.i.d. After 24 weeks of therapy the gradual and steady hypotensive action of Crystoserpine produced an excellent response: blood pressure dropped to 120/75, pulse rate to 64. The tranquillizing effects of Crystoserpine changed F. E.'s personality from an agitated, neurotic patient to a cheerful, calm individual who can take the pressure of his work in stride.

Crystoserpine* is a DORSEY preparation. Available as 0.25 mg. and 1.0 mg. tablets in bottles of 100, 500, and 1,000 tablets.

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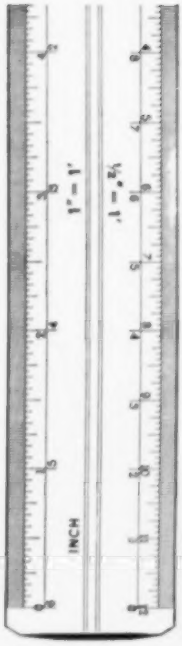
F. E. does best on Crystoserpine . . . for no two hypertensives are alike.



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BARD-PARKER RIB-BACK SURGICAL BLADES

and by any measure it is just as true today as when our Company was founded . . . in the purchase of B-P RIB-BACK SURGICAL BLADES you are provided with the most dependable cutting edges that modern scientific methods and *the art of accuracy* can produce . . . their performance in use is the answer to the question of economy!

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It's Sharp

RIB-BACKS packaged in the *new* RACK-PACK eliminates unwrapping, handling or racking of individual blades. A real *time* and *labor* saver for the O.R. personnel. *In a matter of seconds* from RACK-PACK to sterilizer.

QUALITY AND DEPENDABILITY • UNIFORMLY SHARP • ENDURING CUTTING EDGES

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NASAL DECONGESTANT

Uniformly *Safe!* FOR INFANTS • CHILDREN ADULTS AND AGED

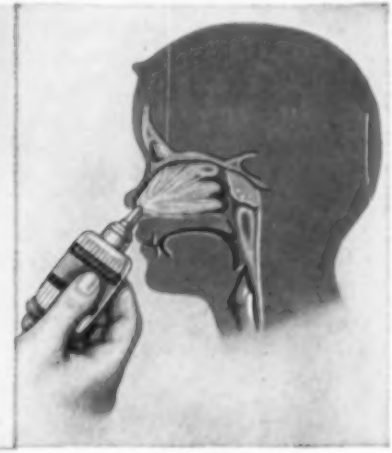
DOES **NOT** CONTAIN ANY ANTIBIOTIC

Does not affect
BLOODPRESSURE
RESPIRATION
CENTRAL NERVOUS SYSTEM

ENTIRELY Safe! in
CARDIAC—DIABETIC
PREGNANCY—THYROID
AND HYPERTENSION CASES

Authoritative Proof sent on request.

COMPLETELY FREE OF SIDE-EFFECTS... no cumulative action...no overdosage problem...non-toxic.



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NOW Modified Formula assures *PLEASANT, PALATABLE TASTE!*

FORMULA: Desoxyephedrine 0.22%; Antipyrine 0.28% w/v in an isotonic aqueous solution with 0.02% Laurylamine Saccharinate, ph 6.4 ± 0.1. Stable. Will not discolor or otherwise deteriorate. All sweetness entirely eliminated.

Available on YOUR prescription only!

Reference to RHINALGAN:

1. Van Alyea, O. E., and Donnelly, W. A.: E.E.N.&T. Monthly, 31, Nov. 1952.
2. Fox, S. L.: AMA Arch. Otolaryn., 53, 607-609, 1951.
3. Malamut, N., and Harber, A.: N.Y. Phys., 34, 14-18, 1950.
4. Left, J. E., (Lt. Col. MC-USAF) Research Report, Dept. Otolaryn., USAF School Aviat. Med., 1952.
5. Hamilton, W. F., and Turnbull, F. M.: J. Amer. Pharm. Ass'n., 7, 378-382, 1950.
6. Brawd, Victor L.: Rehabilitation of Hearing, 1950.
7. Kugelmass, I. Newton: Handbook of the Common Acute Infectious Diseases, 1949.

NEW O TOS-NO-SAN—A specific in Suppurative Ear Infections (Acute or Chronic).

AURALGAN—After 40 years STILL the analgesic and decongestant.

RECTALGAN Liquid—For symptomatic relief in: Hemorrhoids, Pruritus, Perineal Soreness

DOHO CHEMICAL CORP., 100 Varick Street, New York 13, N. Y.

—Continued from page 120a

whom the condition was acute and to whom cortisone therapy was given from two to 14 days after the appearance of Bell's palsy. Four patients in the latter group demonstrated marked improvement within 11 to 17 days after cortisone therapy was begun. The dosage followed was that suggested by Robinson and Moss, i.e.,

50 mg. three times daily for two days.
50 mg. twice daily for two days.
25 mg. three times daily for ten days.

Stilbamidine Used for Pulmonary Blastomycosis Following Pulmonary Resection

A case of pulmonary blastomycosis was discovered in a corporal in the U.S. Marine Corps who had been in the Far East for seven months before the onset of symptoms. It is generally accepted that *Blastomyces dermatitidis* is found only in North America. These organisms were found in a section of the left upper lobe following an exploratory thoracotomy performed by a co-worker of Lt. Kenneth K. Matsumoto who reported the case in the *American Journal of Medical Sciences* [*229:* 172 (1955)]. The patient was given a total dosage of 2.2 gm. of stilbamidine in a first course of treatment and a total of 2.1 gm. after a three-week rest period. There was a mild immediate toxic reaction during the first course, possibly due to too rapid administration of the drug, but none was noted during the second course of treatment. A trace of albuminuria disappeared two days after the

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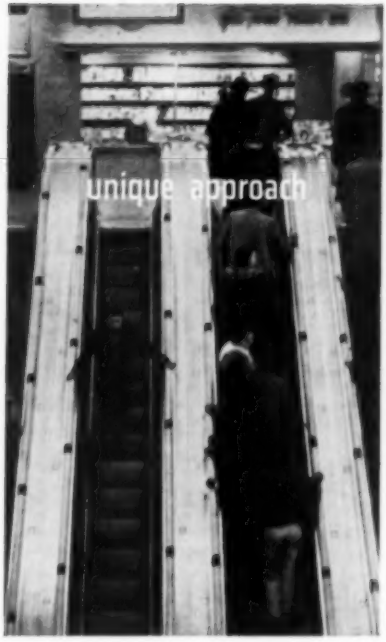

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unique two-way approach

the unique two-way approach of COACTYN
provides the answer for rapid and prolonged
relief in functional g.i. distress

Coactyn

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the pH Adjusted Antispasmodic

COACTYN, with its new *two-way approach* in antispasmodic therapy, not only acts directly on the g.i. tract to relax smooth muscle cells within seconds, but simultaneously blocks the overactive parasympathetic nerve impulses, with a resultant prolonged spasmolytic effect.

Kinney

KINNEY & COMPANY, INC.
Columbus, Indiana

Each teaspoonful (5 cc.) contains:
phenobarbital . . . . . 8 mg.
homatropine methylbromide . . 0.5 mg.
in a pH adjusted phosphorated carbohydrate solution
alcohol, 9.5%

supplied in bottles of 3 fl.oz. and 16 fl.oz.

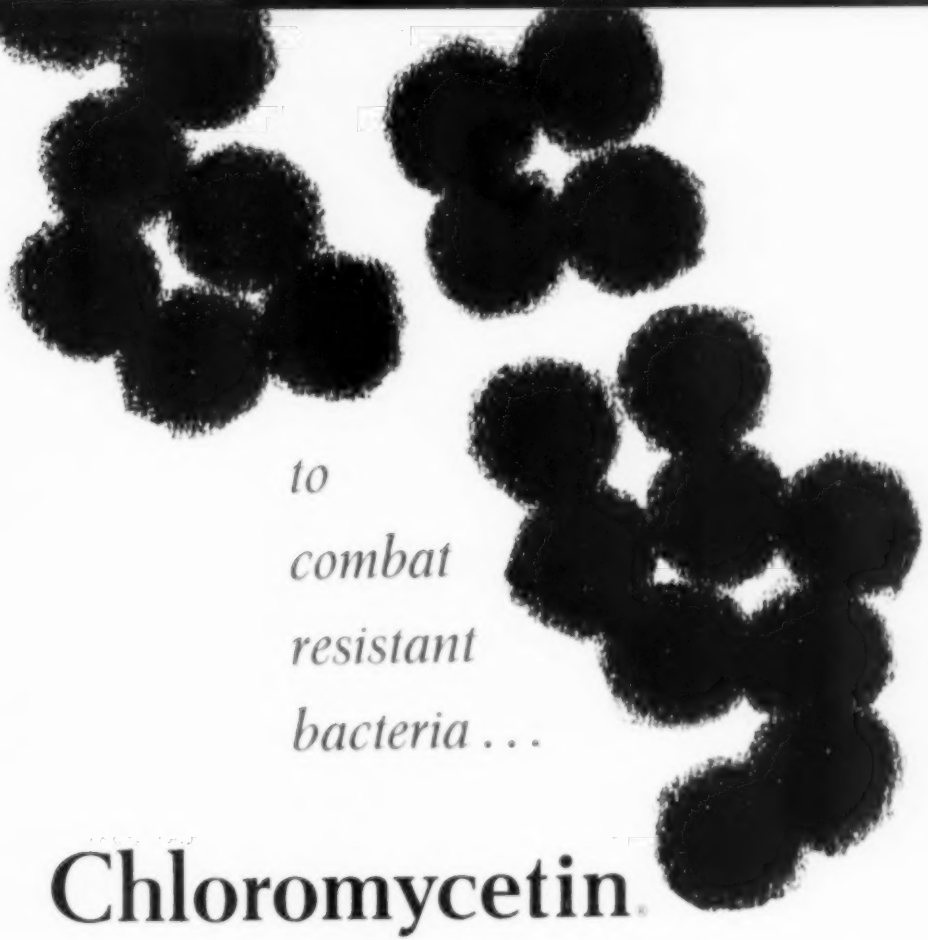
—Continued from page 124a

drug was discontinued. Some renal tubular damage was noted following the second course of administration of the drug, therefore a contemplated third course was not used. Four months later, when the patient was transferred to the United States, cultures from gastric washings were reported negative for blastomycetes.

Histoplasmosis Treated with 2-hydroxystilbamidine

The difficulty of successfully treating histoplasmosis is well known. Many therapeutic agents have failed to produce favorable results. The use of stilbamidine proved disappointing, but it was believed that toxic manifestations may have necessitated inadequate dosage of the drug. Search for an agent producing less toxicity led to the development of 2-hydroxystilbamidine which was used in the treatment of multiple myeloma, blastomycosis and coccidioidomycosis without untoward reactions. Robert F. Nejedly and Lyle A. Baker have reported a case of localized histoplasmosis treated with 2-hydroxystilbamidine in the *Archives of Internal Medicine* [95:37 (1955)]. While it is known that localized lesions of this condition may be self-limiting, complete healing of the lesions in this case appeared to have been brought about by the action of 2-hydroxystilbamidine on the *Histoplasma capsulatum* infection.

—Continued on page 128a



to
combat
resistant
bacteria . . .

Chloromycetin®

The rising incidence of bacterial resistance to various antibiotics constitutes a serious therapeutic problem. Many infections, once readily controlled, are now proving difficult to combat. Administration of **CHLOROMYCETIN** (chloramphenicol, Parke-Davis) is often useful in these cases because this notable, broad-spectrum antibiotic is frequently effective where other antibiotics fail.

"... An advantage of **CHLOROMYCETIN** appears to be its relatively low tendency to induce sensitization in the host or resistance among potential pathogens under clinical conditions."*

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

*Pratt, R., & Dufrenoy, J.: Texas Rep. Biol. & Med. *12*:145, 1954.

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—Continued from page 126a

The authors were able to administer a total dosage of 20 gm. of the drug without evidence of toxic manifestations. Further evaluation of the efficacy of this drug is recommended.

Endometriosis Treated with Stilbestrol

There is no universally accepted mode of therapy for pelvic endometriosis; it may be treated surgically, medically, or by x-ray irradiation of the ovaries. The use of stilbestrol, a relatively new concept in the medical treatment of this condition, was used in the case of 15 patients by Arthur L. Haskins and Ralph B. Woolf *Obstetrics and Gynecology* [5:113 (1955)]. The initial dose was 1 mg. of stilbestrol taken at bedtime on the first day of the next menses. The dosage was increased by 1 mg. every three days until a total daily dosage of 5 mg. was reached. The patient was then given 25-mg. tablets quarter-scored. The dosage was increased in one-quarter-tablet steps every three days to a total daily dose of 100 mg. which was continued for an average period of three months. The dosage was then decreased by a quarter tablet daily until the last dose was taken, approximately 190 treatment days.

Marked changes were noted in the patients soon after therapy was begun. Amenorrhea was a constant finding, and persisted until the stilbestrol was discontinued. About two days after the last dose of stilbestrol had been taken, all patients experienced withdrawal bleeding which was usually profuse and persisted for 7 to 10 days. On no occasion was the amount of bleeding alarming. The first spontaneous menses occurred 24 to 29 days after cessation

—Continued on page 134a

Diets look good on paper

but patients eat food!

It's easy to prescribe a diet . . . and it will be just as easy for patients to follow one, if Ac'cent is recommended with the diet.

Ac'cent brings out the *natural* flavors of foods, and patients will find that it makes the most bland food taste-stimulating and palatable. Even in foods that are held for a long period of time, Ac'cent retains the true delicious flavors.

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in the management of hypertension

The potent autonomic ganglionic blocking action of Methium has now been augmented by the mild hypotensive and sedative properties of reserpine. A true synergistic combination, Methium with Reserpine produces "better hemodynamic stability than when either one is used alone."[1] In one series, a greater number of patients obtained adequate blood pressure reduction than from any single drug or combination of drugs previously reported.[1]

As blood pressure is reduced – and even without reduction – hypertension symptoms such as headache, retinopathy and palpitation have been alleviated.[2] Of special significance, a satisfactory response has been achieved with less than half the usual dosage requirements for Methium.[2] As a result, "the occurrence and intensity of physiologic side effects were markedly reduced and were minimal and of benign nature."[2]

Because of the potency of Methium, careful use is, nevertheless, required. Precautions are indicated in the presence of renal, cardiac or cerebral arterial insufficiency. Markedly impaired renal function is usually a contraindication.

Supplied:

Methium 125 with Reserpine – scored tablets containing 125 mg. of Methium and 0.125 mg. of reserpine.

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1. Ford, R. V., and Moyer, J. H.: Am. Heart J. 46:754 (Nov.) 1953.

2. Crawley, C. J., *et al.*: New York State J. Med. 54:2205 (Aug. 1) 1954.

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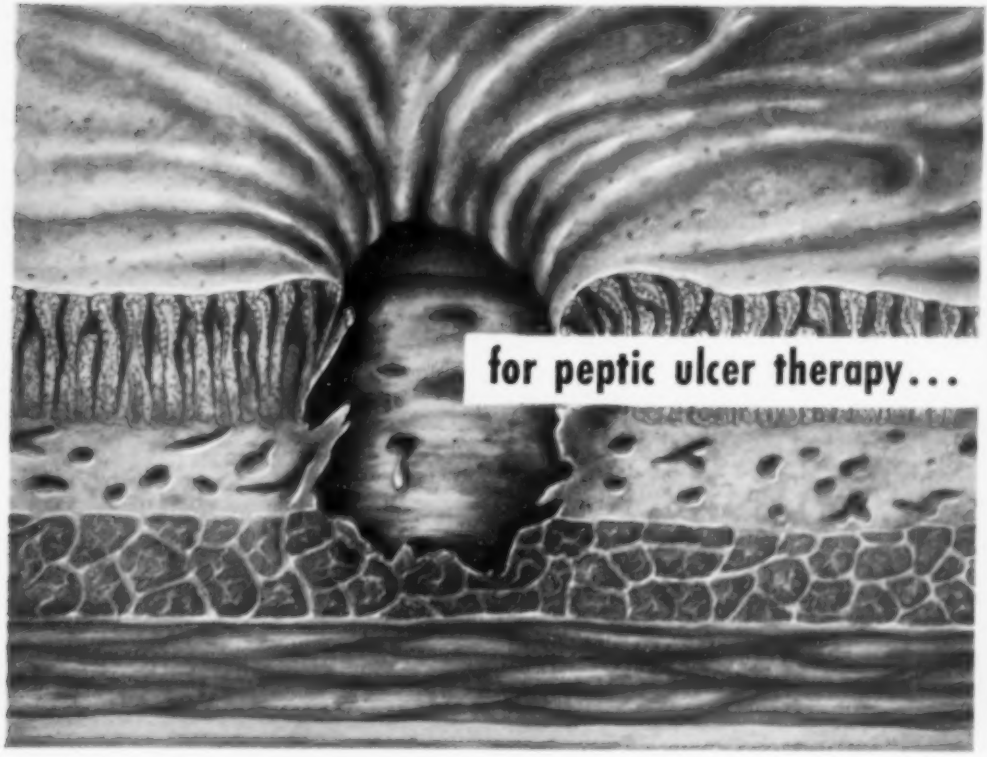

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Knox Gelatine is a high protein food supplement of proven value in the therapy and management of peptic ulcer cases. Neutralizes and buffers gastric acidity. Inhibits enzyme production and reduces motility. All protein. Contains no sugar. Aids in healing.

Knox Gelatine and Instant Dry Milk for Added Supplemental Protein

For your patient's protection, be sure you specify KNOX so that the patient does not mistakenly get ordinary gelatin desserts, which are 85 per cent sugar.

Available at grocery stores in 4-envelope family size and 32-envelope economy size packages.

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ALL PROTEIN
NO SUGAR

To the extent that Gelatine-Milk combinations have formed a sound dietary basis for the management of peptic ulcer, it is suggested that Knox Gelatine may be mixed with instant dry milk as a palatable antacid and enzyme inhibitor for relief of symptoms as well as an easily digestible source of extra protein. Knox Gelatine and dry milk taken as a beverage provides generous supplies of essential amino acids. Instructions for making the Knox Gelatine drink are printed on every envelope of Knox Gelatine.

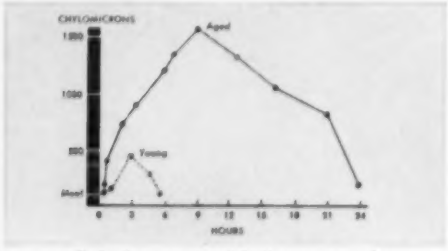
CHARLES B. KNOX GELATINE CO., INC. • JOHNSTOWN, NEW YORK

ATHEROSCLEROSIS

Revised concepts of etiology predicate new therapeutic approach

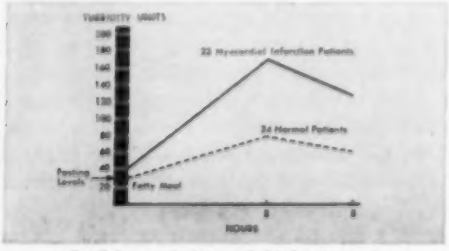
Recent studies attach increasing importance to the particle size and physical characteristics of certain blood lipids, rather than total serum cholesterol as such, in the genesis of atherosclerosis. Assays of neutral fat particles in the blood (chylomicra) following fat ingestion, and the closely related concentration of low-density "giant" lipoprotein molecules, show much greater correlation with clinical atherosclerosis than either the serum cholesterol level *per se* or the cholesterol-phospholipid ratio.

It has also been shown that (1) a high incidence of hypercoagulability and low blood heparin levels exist in patients with cardiovascular disease and atherosclerosis; (2) circulating heparin tends to decrease with age; and (3) an inverse ratio exists between the concentration of giant lipoprotein molecules and serum heparin levels.



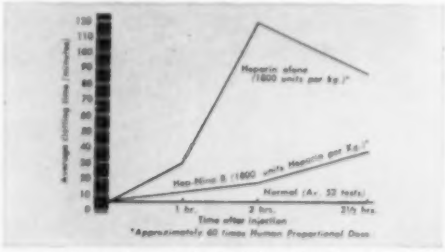
Chylomicron curves of fasting young and old subjects after a Standard fat meal. After Becker et al: Science 110:529, 1949.

Parenterally administered, heparin exerts a profound "clearing" action on chylomicra and the giant molecules. This action is independent of heparin's anticoagulant effect. In the treatment of atherosclerosis, the addition of choline and specific B vitamins appears to enhance heparin's efficacy. Vitamin B_{12} and folic acid aid in the synthesis of labile methyl groups and the transmethylation process. Choline specifically increases the phospholipid turnover, and parenterally administered, it has been shown to have a distinct vasodilating effect. *Most significantly, however, choline decreases the anticoagulant action of heparin, when both drugs are administered simultaneously at the same site, without impairing the clearing effect of heparin.* Thus the use of heparin for atherosclerotic diseases is rendered safe as a routine office procedure, without necessity for periodic clotting time determinations.



Fat Tolerance in Myocardial Infarction and Control Patients. From data of Schwartz et al: JAMA 149:364, 1952.

A preliminary clinical report* on HEP-NINE B —which combines heparin, choline, vitamin B_{12}, folic acid and niacinamide for intramuscular injection—indicates that the combination offers considerable promise in a variety of conditions in which atherosclerosis plays a part, such as angina pectoris, myocardial infarction, coronary disease, related kidney and liver diseases, diabetes mellitus, and certain



Comparison of effects of Hep-Nine B and Heparin alone on clotting time

cases of obesity. Pharmacologic studies showed no significant effect on coagulation time, even in dosage far exceeding that recommended. Chylomicron concentration was reduced promptly in all cases following a single injection, ranging from a minimum 29% reduction (diagnosis: anterior myocardial infarction) to a maximum of 100% (diagnosis: multiple cerebral thrombosis). In patients selected for a history of myocardial infarction or diabetes, the atherogenic index as determined by the Gofman Serum Lipoprotein Test was materially reduced in all cases without benefit of diet restriction. Of 30 patients with recurrent angina pectoris, 23 experienced marked reduction in frequency and severity of episodes. Nitroglycerine requirements were reduced and exercise tolerance was increased in all cases. No patient suffered coronary occlusion or myocardial infarction during the period of study.

*Read, J. T., and Obetz, R. C.: *Clinical Experience with Parenteral Heparin-Lipotropic Therapy in Cardiovascular Diseases.* Ohio State M. J. (In press).

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(brand of hydrocortisone)

the predominant anti-rheumatic hormone, "...highly effective in suppressing the activity of the disease and... maintaining control of rheumatic manifestations."[1] Side actions are "fewer and less pronounced."[2]

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references: 1. Boland, E. W., and Headley, N. E.: J.A.M.A. 148:901, March 22, 1952. 2. Boland, E. W.: M. Clin. North America, Philadelphia and London, W. B. Saunders Company, March, 1954, p. 347.

*brand of oxytetracycline and hydrocortisone

—Continued from page 128a

of therapy. It would seem that this method of treatment could be used as a substitute for surgical procedures.

Current Therapy in Pulmonary Tuberculosis in the United States

Speaking in London, Dr. Harold G. Trimble of Stanford University *British Medical Journal* (January 29, 1955) outlined a study carried out under the auspices of the Committee on Non-surgical Collapse Therapy of the American College of Chest Physicians. A questionnaire accompanied by case histories with a single chest radiograph was sent to 100 physicians. The cases presented were those of 10 individuals upon whom a similar study has been made in 1948. All had positive sputum, but were without unusual complications. The cases were classed as: (a) minimal, (b) moderately advanced, and (c) far advanced. Examples of each group were cited.

The replies showed that practically no one would advise bed rest alone. Antimicrobial therapy was generally accepted as routine treatment of pulmonary tuberculosis at any stage. The drugs of choice were streptomycin, para-amino-salicylic acid (P.A.S.), and isonicotinic acid hydrazide (isoniazid). A combined use of these drugs was recommended; the first two usually, but all three in far advanced cases. Streptomycin was used in a dosage of 1 G. twice weekly, with P.A.S. by

—Concluded on page 136a

One way to keep baby's food budget low . . .

As a physician, you know how important to young parents is the cost of raising a baby. Also you want to give babies in your care the best possible nourishment. Pet Evaporated Milk helps both ways—it provides all the body-building nourishment of milk, is always uniform in composition and quality. Yet Pet Milk costs less than any other form of milk . . . *far less than special infant feeding preparations.* It's one milk that keeps babies growing up . . . infant feeding costs down. In fact, it can save up to $50 on baby's food bill during that vital first year.

Favored Form of Milk For Infant Feeding

PET MILK COMPANY, ARCADE BUILDING, ST. LOUIS 1, MO.

news! IMPORTANT PRICE REDUCTION

Furadantin

TABLET

prices reduced

18%

The rapidly expanding routine use of Furadantin in acute and chronic urinary tract infections has enabled us to make an average reduction of 18% in the cost to your patients.

50 and 100 mg. tablets. Furadantin Oral Suspension, 5 mg. per cc.

EATON LABORATORIES
NORWICH, NEW YORK

for true economy in urinary tract infections

FURADANTIN®
brand of nitrofurantoin, Eaton

MODERN THERAPEUTICS

—Concluded from page 134s

mouth to tolerance—about 12 G. daily. Isoniazid was used in doses from 3 mg. to 10 mg. per kg. of body weight, the majority favoring 3 to 5 mg. per kg. Since 1948 the use of bed rest plus drugs and without collapse therapy has increased tremendously. Also, there has been a marked drop in the use of pneumothorax in favor of pneumoperitoneum.

Hodgkin's Disease Treated with Colchicine

Colchicine was administered to a series of ten patients who were no longer responsive to the conventional treatments with irradiation, nitrogen mustard and triethylene melamine. Arthur Grollman and his associates, writing in the *Annals of Internal Medicine* [*42:* 154 (1955)], have briefly outlined the case histories of these patients and have noted the results obtained by a course of treatment with colchicine. Doses of 3 mg. of the drug given intravenously every third day are well tolerated. A prompt decline in the body temperature following ingestion of the drug contributed to marked subjective improvement of the patients. In some instances, the combined use of colchicine and irradiation therapy showed satisfactory response. The results obtained by this study are sufficiently encouraging, the authors believe, to warrant further trial of colchicine and related alkaloids in the treatment of Hodgkin's disease.

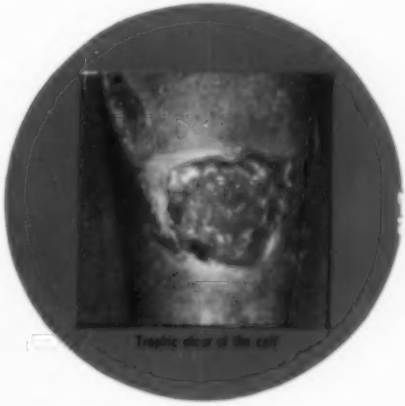
TREAT this difficult condition with

Parenzyme®

NATIONAL

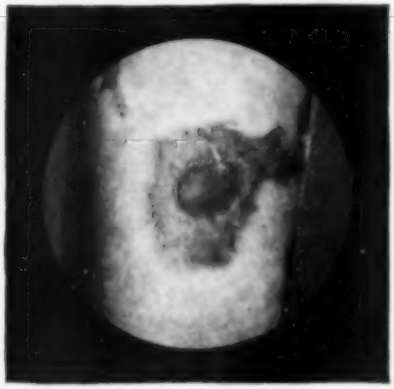
Intramuscular trypsin

- Safe
- Not an anticoagulant
- Compatible with antibiotics and other indicated therapy



BEFORE:

Patient, an elderly housewife, had congestive heart failure and 4 plus edema in the infected leg. This highly inflamed lesion continued to spread despite antibiotics and topical enzyme preparations.



AFTER:

Parenzyme Intramuscular Trypsin was given intragluteally, 0.5 cc. t.i.d. Within one week edema and redness subsided.

Note: Additional information sent on request.

TIME BETWEEN PHOTOS: 8 WEEKS.

OBTAIN

striking improvement

Other Indications:

Skin ulcers
decubitus
diabetic
varicose

Traumatic wounds
slow-healing wounds
bruises
contusions
black eyes

Vascular disorders
phlebitis
thrombophlebitis
phlebothrombosis

Ophthalmic disorders
iritis
iridocyclitis
chorioretinitis

Important Clinical Reports:

Innerfield, I., *Trypsin Given Intramuscularly in Chronic, Recurrent Thrombophlebitis*, *J.A.M.A.*, 156:1056-1058 (Nov. 13) 1954. Golden, H., *Intramuscular Trypsin, Its Effect in 83 Patients with Acute Inflammatory Disorders*, *Del. State Med. J.*, 26:267-270 (Oct.) 1954.

DOSAGE: 2.5 mg. (0.5 cc.) intragluteally q. 6 h. until improvement results; q. 12 h. thereafter.

SUPPLIED: 5-cc. multiple-dose vials (5 mg. trypsin/cc.).

The National Drug Company, Philadelphia 44, Pa.

Complete literature on request.

ACHROMYCIN CAPSULES

The most widely prescribed form
of this widely prescribed antibiotic.
ACHROMYCIN Capsules are available in potencies
of 50 mg., 100 mg., and 250 mg.

for every need—a suitable dosage form

*REG. U. S. PAT. OFF

Other Dosage Forms:

TABLETS: 50, 100, and 250 mg.

PEDIATRIC DROPS (Cherry Flavor): 100 mg. per cc. (approx. 5 mg. per drop), 10 cc. bottle

ORAL SUSPENSION (Cherry Flavor): 250 mg. per teaspoonful (5 cc.), 1 oz. bottle

SPERSOIDS* Dispersible Powder (Chocolate Flavor): 50 mg. per rounded teaspoonful (3 Gm.), 12 and 25 dose bottle

SOLUBLE TABLETS: 50 mg.

INTRAVENOUS: vials of 100, 250, and 500 mg.

INTRAMUSCULAR: vial of 100 mg.

OINTMENT (3%): ½ and 1 oz. tubes

OPHTHALMIC OINTMENT (1%): ⅛ oz. tube

OPHTHALMIC SOLUTION: vial of 25 mg. with sterilized dropper vial

EAR SOLUTION (0.5%): 10 cc. dropper bottle

SYRUP (Cherry Flavor): 125 mg. per teaspoonful (5 cc.), 2 oz. bottle

In any of its numerous dosage forms, ACHROMYCIN is a potent weapon to combat a variety of infections. This true broad-spectrum antibiotic has proved effective in controlling Gram-negative and Gram-positive bacteria, rickettsia, spirochetes, and certain viruses and protozoa.

And ACHROMYCIN is unusually kind to the patient! Extensive use, in children and adults, has shown it to be practically free of untoward side reactions. ACHROMYCIN diffuses rapidly in body tissues and fluids, is readily soluble, and remains stable for 24 hours in solution.

When a broad-spectrum antibiotic is indicated, remember—for your convenience, for the patient's comfort, there's a particular dosage form of ACHROMYCIN to fill the need!

LEDERLE LABORATORIES DIVISION *American Cyanamid Company*
PEARL RIVER, NEW YORK

*HROMYCIN

NEWS AND NOTES

Psychosomatic Illness Not "All in the Mind"

Internal illnesses resulting from nervous or emotional disturbances are not just "all in the mind," a Philadelphia physician said today.

Actually, these illnesses involve nerve channels from the brain to the internal organs, and can possibly be treated by drugs which slow down or stop the nerves' actions, Dr. J. Earl Thomas said in a recent issue of the *Journal of the American Medical Association.*

The "dream" of treating such diseases by medicine alone has not been realized. But it is possible to make many symptoms disappear, in a disease such as duodenal ulcer, to "the great relief of the patient."

Dr. Thomas said the brain is "an avenue of communication" between external stimuli and internal reactions, and "confusion in the brain is likely to be communicated to the internal organs." Diseases caused by such errors of function are called "psychosomatic." However, he said any influence the brain has on the body must come through material channels, the nerves. Thus, these mental-emotional disorders do have a physical basis in the nervous system.

"The idea that the viscera are in some way involved in the major emotions is as old as recorded history," he said. Emotions, like other experiences, are responses to stimuli and may react in

—Continued on page 144a

HELP

for the Bowel-conscious Patient

CHOLAN HMB

acts promptly to provide:

1 **Hydrocholeresis –**
abundant fluid bile

2 **Spasmolysis –**
safe and dependable
relaxation of biliary tree

3 **Sedation –**
for the psychosomatics

CHOLAN HMB–

Dehydrocholic acid
250 mg.

Homatropine methylbromide
2.5 mg.

Phenobarbital
8 mg.

Maltbie

MALTBIE LABORATORIES DIVISION • WALLACE & TIERNAN INC.
BELLEVILLE 9, NEW JERSEY

—Continued from page 142a

the same way as ordinary reflexes. Once a response is made, the next time the same stimulus appears the response returns and eventually may come if the stimulus is only suggested, such as by memory or imagination. The nerve chain involved thus becomes a "path of low resistance."

If the pathways are stimulated often enough in the same way, the conscious emotional response and the unconscious internal reaction may become permanently associated. They appear at the same time. This may result even from the appearance of nothing more than the circumstances usually associated with the stimulus. This fact may explain the seasonal or annual recurrence of a disease such as peptic ulcer.

Assuming that some diseases, notably peptic ulcer and ulcerative colitis, are started or become worse because of overactivity of the nerves, interference with the paths of low resistance should prevent illness. Dr. Thomas said this is possible with drugs which depress the particular nerves involved.

Weather is Important to Well-Being

Blaming the weather for "blue" moods and bad colds is not at all unscientific, a Chicago physician said today.

The weather was blamed for the common cold as olng as 2,000 years ago and scientific investigation has shown that Hippocrates was right, Dr. Noah D. Fabricant said.

In fact, weather changes are reflected in all of the body's processes, and can

—Continued on page 146a

'For many years the natives of the Dutch Indies have used the squeezed juice of the Curcuma in the treatment of diseases of the liver'

Gallogen

Gallogen (gal-o-jen) is the Massengill name for the synthesized active principle of the ancient drug Curcuma. The isolation and synthesis of the active principle permits the administration of a pure, standardized form of the drug. Gallogen is a true choleretic, not a bile salt.

Gallogen acts directly on the hepatic cells. It stimulates the flow of bile which is whole in volume and composition. The choleresis is in proportion to the functional capacity of the liver and is prompt and lasting.

Gallogen is indicated whenever it is desirable to increase the flow of bile, encourage activity of the gallbladder and promote normal function of the biliary system.

send for professional literature and sample

Supply: in bottles of 100 and 1000 tablets containing 75 mg. of the diethanolamine salt of the mono-d-camphoric acid ester of p-tolylmethyl carbinol.

THE S. E. MASSENGILL COMPANY, Bristol, Tennessee

NEWS AND NOTES

—Continued from page 144a

have an effect on emotions, colds, asthma, heart disease, and even suicide. The weather can often be "the straw that breaks the camel's back," Dr. Fabricant said in a current issue of *Today's Health*.

There's an explanation for it, he said. Tests have shown that "every change in weather involves a physiological adjustment in everyone." For instance, colds increase when temperature drops because the membranes of the nose and throat become altered and fall easy victim to invading germs. In fact, scientists have said that the form of the nose depends on the climate—the colder the climate, the narrower the nose. Eskimos have narrower noses than Africans.

At least somebody is trying to "do something about the weather," Dr. Fabricant said. Taming the weather has become a foremost interest of many engineers, architects, meterologists, and physicians. Some planners are convinced that buildings could be placed to serve as windbreaks, streets laid out to avoid wind channels, and houses built to reject rather than absorb heat.

One way to prevent the shock of going from an air-conditioned room into the heat, or from a heated room into the cold, is to have a closer adjustment between the two atmospheres.

"Some physicians believe that a number of diseases will respond to controlled weather and climatic conditions," he said. "Though more than a beginning has been made toward deflating the common cold nuisance, it is reasonable to expect that in the future attention to

—Continued on page 148a

in varicose vein

complications...

striking relief

of signs and symptoms

MY-B-DEN®

(adenosine-5-monophosphate)

Bischoff DIVISION

ulcers begin to heal[1-4]
pain and burning disappear[1-3]
pruritus subsides[1-4]
edema, erythema, and tenderness decrease[1-3]

Administration: MY-B-DEN may be administered in the office, hospital or home, 1 cc. (20 mg. or 100 mg.) intramuscularly three times weekly or as needed. *The site of injection is the upper outer quadrant of the buttock.*

Supplied: Sustained-Action MY-B-DEN (in gelatine solution): 10 cc. vials in two strengths, 20 mg. per cc. and 100 mg. per cc. adenosine-5-monophosphate as the sodium salt.

Also available: MY-B-DEN (NOT Sustained-Action) in ampules and sublingual tablets.

References: (1) Lawrence, E. D.; Doktor, D., and Sall, J.: Angiology *2*:405, 1951. (2) Rottino, A.; Boller, R., and Pratt, G. H.: Angiology *1*:194, 1950. (3) Boller, R.; Rottino, A., and Pratt, G. H.: Angiology *3*:260, 1952. (4) Pratt, G. H.: Surg. Clin. North America *33*:1229, 1953.

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64455

—Continued from page 146a

controlled atmospheric conditions will play a role in ameliorating colds."

New Drug Stops Severe Hiccups

Unmanageable hiccups lasting as long as nine months have been stopped almost immediately by a new drug, two Brooklyn physicians said today.

Drs. Charles E. Friedgood and Charles B. Ripstein reported in a recent issue of *J.A.M.A.* that all but four of 50 patients stopped hiccuping when given chlorpromazine.

While hiccups may be just a nuisance to most people, in some illnesses they "may progress to exhaust the patient's strength and produce marked depression or even death," they said.

One of their patients had been hiccuping intermittently every day for nine months. After five days of continued hiccups, he was brought to the hospital in an exhausted state. After one injection of chlorpromazine the hiccups stopped immediately. Another patient had been hiccuping for nine days, was completely exhausted, and had to be fed intravenously. His hiccups stopped three minutes after taking chlorpromazine.

The physicians said that if the cause of hiccups cannot be treated, hiccuping may return. Five of their patients had hiccups again, but further treatment reduced their intensity and frequency. Four patients did not respond because

the cause of hiccups could not be treated.

Chlorpromazine is a "safe and useful" drug for treating unmanageable hiccups not stopped by other methods, the physicians said. The drug has been used previously to aid in anesthesia and sedation, lower body temperature, quiet mental patients, and relieve severe pain and nausea.

Preliminary Report Made On Lung Cancer Survey

Researchers today made a preliminary report on a search for a better way to find lung cancer while still curable.

They said although the study has not gone far enough for any final conclusions, they already have noted some interesting facts about lung cancer detection.

So far they have surveyed 3,945 men over 45 and plan to study a total of 6,000 for 10 years in the Philadelphia Pulmonary Neoplasm Research Project. The preliminary report was made in a recent issue of *J.A.M.A.*

The researchers said there is an "impressive contrast" between detection of curable tuberculosis and curable lung cancer in well-conducted mass surveys. While much curable TB can be found, results are not so good for cancer. Despite emergency action in suspected cancer cases found through official Philadelphia chest x-ray units, surgery could be performed in only 30 per cent of 100 consecutive cases. Since finding cancer while it is still in the operable stage is the only present hope for survival, the researchers said these results made them question the suitability of

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NEWS AND NOTES

—Continued from page 149a

single x-rays for finding curable cancer.

Their project includes chest x-rays plus examinations and interviews about symptoms and smoking habits every six months. So far they have raised the operability rate from 30 to 46 per cent.

However, they said referral to hospitals after finding suspicious x-rays or symptoms is still too slow. Seventeen men were operated on out of 37 proved cancer cases, and only 11 survive. The median interval between examination and operation was 55 days for the survivors and 81 days for the six who died.

They said it was important to note that a high proportion of the men studied had some symptoms. The most important were worsening cough and spitting of blood. Others were chest pains, sense of heaviness, weight loss, hoarseness, continued cough and wheeze.

The researchers said important factors in curing lung cancer are detection in the operable stage, promptness in seeking medical attention, adequate and frequent examinations, ability to obtain hospital beds quickly, and surgical skill. They said some questions still remain and they hope to answer some of the practical problems through the study.

They also noted that none of the cancer cases found occurred among the 559 nonsmokers included in the survey. However, they said the number of cancer cases was small and they do not imply "any cause and effect relationship."

The report was made by Drs. Katherine R. Boucot, William Carnahan,

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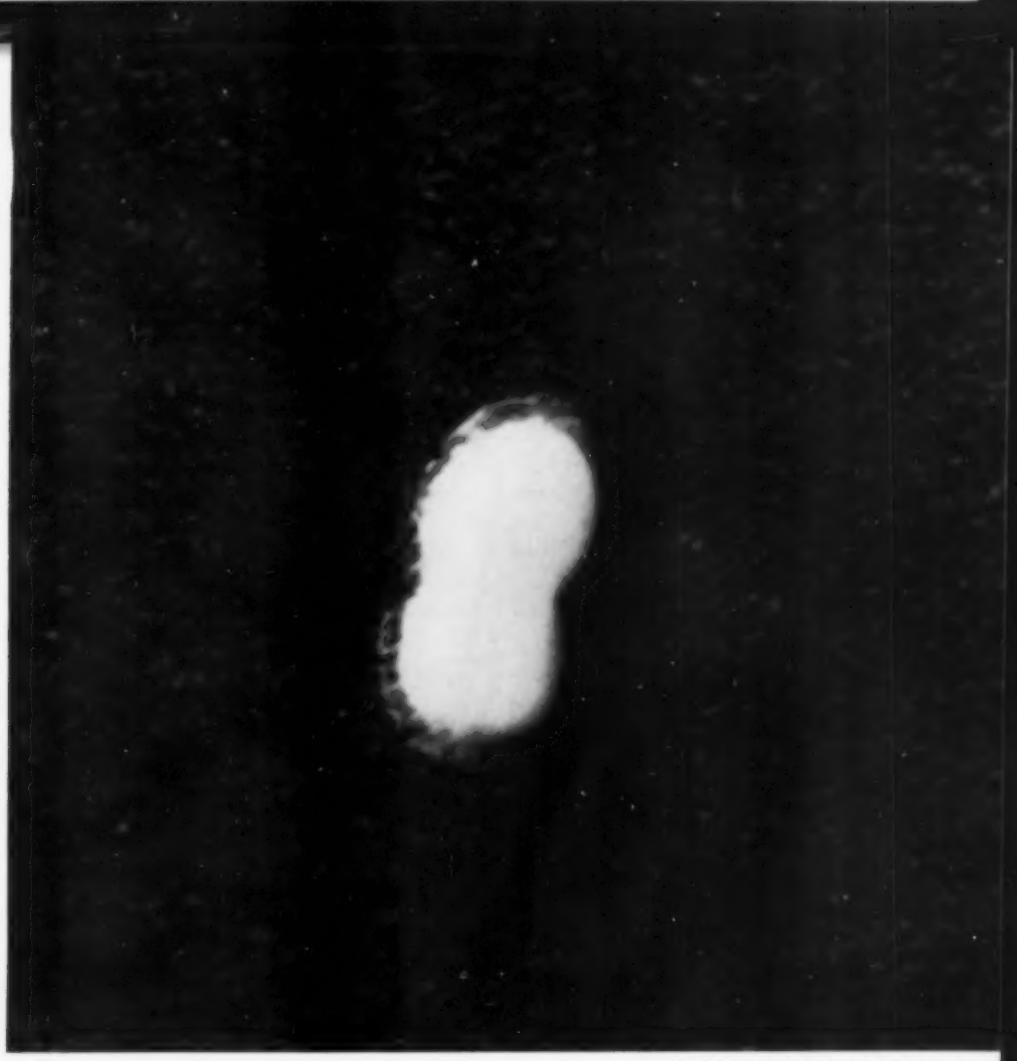

ELECTRON PHOTOMICROGRAPH

Diplococcus pneumoniae 35,000 X

Diplococcus pneumoniae (Streptococcus pneumoniae) is a Gram-positive organism commonly involved in lobar—and bronchopneumonia • chronic bronchitis • mastoiditis • sinusitis otitis media • and meningitis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

125 mg./tsp. and 250 mg./tsp. oral suspension (**PANMYCIN** *Readmixed)*

Upjohn

* TRADEMARK, REG. U. S. PAT. OFF.

—Continued from page 150a

David A. Cooper, Donald J. Ottenberg, and Peter A. Theodos, and by Thomas Nealon, Jr., M.C., U.S.N.R.

Artificial "Pacemaker" Used on Heart

Electrical stimulation on the outside of the chest was used to help maintain a man's heartbeat for seven days, two New York physicians said today.

Drs. Albert H. Douglas and William P. Wagner, Jamaica, N. Y., reported the case in a recent issue of *J.A.M.A.* They said the 72-year-old patient's heart began to miss beats after numerous attacks of unconsciousness and convulsions. About 18 hours after the attacks started, the man was in a coma and suffering from lack of oxygen in the blood stream.

They said they applied an "artificial pacemaker," and the patient regained consciousness after two hours. During treatment he was able to eat, drink, and perform other functions easily. The pacemaker operates by use of alternating currents from two electrodes placed on the skin of the chest, which stimulate the heartbeat.

Attempts to remove the pacemaker were followed by unconsciousness and imperfect heartbeats, until after seven days they noted several spontaneous beats. The pacemaker was turned off and then removed. Two months later the patient was seen again, walking about and without symptoms. The only

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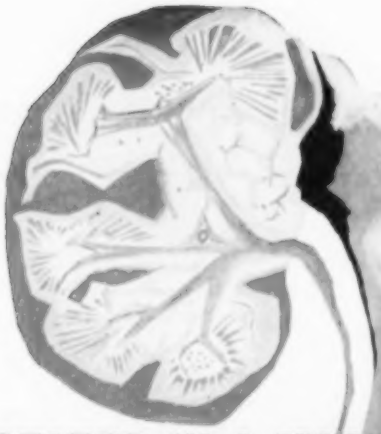

IN URINARY TRACT INFECTIONS

RELIEF

STARTS IN A MATTER OF MINUTES WITH

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***SWIFTLY* combats the two primary causes of pain, burning, urgency, dysuria, frequency in genito-urinary infections.**

URISED's dual-powered formula exerts direct and steadfast control on pain-producing factors.

In a matter of minutes, through the parasympatholytic action of atropine, hyoscyamine and gelsemium, painful smooth muscle spasm is usually relieved and relaxed—directed toward a restored normal tone. In two or three days, distress may subside completely.

With equal rapidity, URISED's antibacterial agents — methenamine, salol, methylene blue and benzoic acid—traverse the entire urinary tract to hold bacterial growth at a minimum, reduce bacterial and pus-cell content, encourage healing of mucosal surfaces.

Prescribe URISED with confidence for prompt, effective pain relief, and for more dependable control of pyelitis, cystitis and urethritis. It is virtually non-toxic.

Overcomes Muscle Spasm

Prompt Antisepsis

Samples, literature, available on request.

Supplied in bottles of 100, 1000, 2000

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5547 N. Ravenswood Ave., Chicago 40, Illinois

Pacific Coast Branch
381 Eleventh St., San Francisco, Calif.

Southern Branch
240 Spring St., N. W., Atlanta, Ga.

—Continued from page 152a

after-effects appeared to be some skin irritation where the electrodes had been placed.

International Academy of Proctology to Meet in New York March 23-26

New research in proctology and related fields, as well as the implications of these developments for the general practice of medicine, will be reported at the 7th annual meeting of the International Academy of Proctology, to be held from March 23 through 26 in New York City. Panel discussions on cancer of the lower intestine and on ulcerative colitis will highlight the Academy's scientific sessions at the Hotel Plaza in New York City on March 23, 25, and 26, and at the Jersey City Medical Center on March 24. Operating clinics and a symposium on intestinal surgery and related conditions will be given by members of the Jersey City Medical Center. A special group of film demonstrations will be presented in a Visual Education session.

In accordance with its established practice, the Academy extends an invitation to all physicians to attend its sessions, and the American Academy of General Practice will grant credits to its members attending the meeting. Of special interest will be a discussion of proctology in general practice, especially in reference to the physical examination. A proctologist and a general practitioner will exchange ideas on this subject of increasing importance. The

—Continued on page 156a

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International Academy of Proctology is one of the specialty groups which have pioneered in bringing the specialist and the general practitioner together to discuss problems of mutual concern. With the rapidly increasing volume of research in various medical fields, this is one technique for quickly and thoroughly screening and disseminating new information and methods to the general practitioner. Until comparatively recently there were no such facilities for this type of teaching seminar. Specialty meetings usually resolved themselves into experts informing the experts, just as specialty journals are read largely by specialists. However, much of the material presented at these meetings is of value to the general practitioner, and the growing practice of inviting him to the specialty meeting is proving an effective way of bridging the gap between the laboratory and the patient.

Physicians Offer Ideas On Auto Safety

Physicians are continuing their search for a way to reduce highway accident deaths.

Two physicians, in letters published in a recent issue of the *J.A.M.A.*, debated the merits of auto safety belts and agreed that belts alone are not the entire answer. They said over-all automobile design must be improved and other safety measures developed.

The A.M.A.'s House of Delegates, meeting in San Francisco in June, passed a resolution calling for wider use of safety belts, and recommending

—Continued on page 158a

Rabellon.

COMPOUND OF BELLADONNA ALKALOIDS

in parkinsonism,
a "mainstay of treatment for many years"[1]

MAJOR ADVANTAGES: Provides three purified belladonna alkaloids for synergistic effect. Reduces rigidity and tremor. Improves mental outlook.

RABELLON checks tremor, makes fine movements possible

Within a week after you prescribe RABELLON, you can expect improvement in your parkinsonian patient. RABELLON lessens muscle rigidity and tremor. Speech, gait and handwriting become better. Your patient will be able to get out and about again, be able to live a more normal life. No wonder the mental outlook often improves when your patient takes RABELLON.

Each quarter-sected RABELLON tablet contains 0.4507 *mg.* hyoscyamine hydrobromide, 0.0372 *mg.* atropine sulfate and 0.0119 *mg.* scopolamine hydrobromide.

SHARP & DOHME

Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

References: 1. Journal Lancet 74:245 (July) 1954.

NEWS AND NOTES

—Continued from page 156a

that auto manufacturers emphasize safety in all car designs.

Dr. John H. Schaefer, Los Angeles, said today he believes that auto seat belts as presently designed will save no lives. He said a device that would distribute force evenly over a large area of the body and would yield in absorbing this force would be "valuable."

He also said that placing seats facing backward and building them high enough to support the head would be a "logical answer to the problem of motor car collision, but I doubt that the public would accept it."

However, Dr. Horace E. Campbell, Denver, chairman of the automotive safety committee of the Colorado State Medical Society, said he cannot agree with all of Dr. Schaefer's conclusions. He said Dr. Schaefer is right in saying the safety belt is being called on to do something it was not designed to do, but it is at least doing "a fourth" of the job.

The trouble is, Dr. Campbell said, that seat belts aren't good enough so long as cars are designed as they are.

He said seats in motor cars come loose easily and it is "senseless" to fasten belts to the seats. They should be fastened to the frame and supplemented by chest or shoulder harness, "until the motor car manufacturers begin to give us seats to which these may be attached. . . ."

"The Indiana State Police have recommended crash helmets for motorists, and while it seems ridiculous at present, it was thought ridiculous only a few years ago for construction

workers to wear 'tin' hats," he said. "We have two courses. We can continue to accept 39,000 motor car deaths a year, together with 1,500,000 injuries, or we can interpose structures between ourselves and the structures that are killing us."

Shaving May Cause Skin Disease

A Canadian physician has come up with a theory about why some men get skin diseases in the bearded area of the face.

He says it is all in the way they—or their barbers—shave. Dr. Gibson E. Craig, Montreal, said shaving "against the grain" is what causes folliculitis, and inflammation of the depressions from which hairs grow.

Dr. Craig said his theory would explain "why some men get folliculitis every time they get shaved by a barber who in his enthusiasm shaves in all directions," and "why electric razors pushed in all directions across the face with their large heads flattening the follicular mounds probably cause as much trouble as blades, or even more."

However, he notes that the reverse position about electric razors may be taken. Using an electric razor has been recommended as a way to stop skin disease.

Here's how Dr. Craig explains his theory in a recent issue of *Archives of Dermatology*. The grain, or direction of hair growth, generally runs from above downward parallel to a line from the top of the nose to the chin. In shaving many men pull the skin tight, which depresses the mound around each hair. When the hair is cut and the skin loosened, the cut end may be below normal skin level. When it grows out, in-

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NEWS AND NOTES

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stead of coming through the usual canal it grows into the edge of the skin from underneath, sometimes doubling up outside the skin. This inflames the skin and causes folliculitis.

Dr. Craig said he does not claim that his idea is original, since at least one other doctor has mentioned it to him. And it is hard to prove. But it would explain why folliculitis appears only in bearded areas, and frequently on the neck where the grain changes direction.

His treatment consists of warm compresses to soften the skin, plus a medicated cream to control infection. In the meantime, no shaving allowed.

Group Living Program Helps Mentally Ill Youngsters

Youngsters suffering mental illness seem to reflect "the turmoil and bizarre behavior" of "normal adolescence," two

—Continued on page 162a

MEDICAL TEASERS

Solution to puzzle on page 43a

P	A	S	T	A	■	R	A	S	P	■	T	A	B	U
A	V	E	R	S	■	A	R	T	H	R	I	T	I	S
P	O	L	Y	P	■	G	U	Y	■	A	T	O	N	E
A	W	L	■	I	T	E	M	■	F	I	L	M	E	D
■	■	■	I	R	I	S	■	P	O	N	E	■	■	■
S	E	P	T	I	C	■	B	U	R	Y	■	B	E	E
A	G	A	I	N	■	G	O	L	D	■	T	E	L	A
G	A	R	S	■	D	R	O	P	■	V	I	R	U	S
O	D	E	■	V	E	I	N	■	T	I	N	G	L	E
■	■	■	S	I	L	T	■	D	U	T	Y	■	■	■
S	A	M	P	L	E	■	B	E	T	A	■	S	A	M
I	D	E	A	L	■	H	O	T	■	M	I	N	C	E
C	O	R	T	I	S	O	N	E	■	I	R	A	T	E
K	N	E	E	■	O	D	E	R	■	N	I	G	H	T

The Prognosis in PSORIASIS

RIASOL

Bad, says the dermatologist, until he tries RIASOL. In a series of 231 cases treated by various medications, Lane and Crawford* reported only 16.5% remissions.

The use of RIASOL greatly improves the prognosis. In a series of psoriatics treated with RIASOL after other medications had failed, the cutaneous lesions were completely cleared or improved in 76% cases. In the successful cases the skin patches cleared up in an average of 8 weeks.

The patient with psoriasis must be **encouraged**, not **discouraged** by a hopeless prognosis. Psychiatrists have reported neuroses in psoriatics because of undue pessimism on the part of the attending physician.

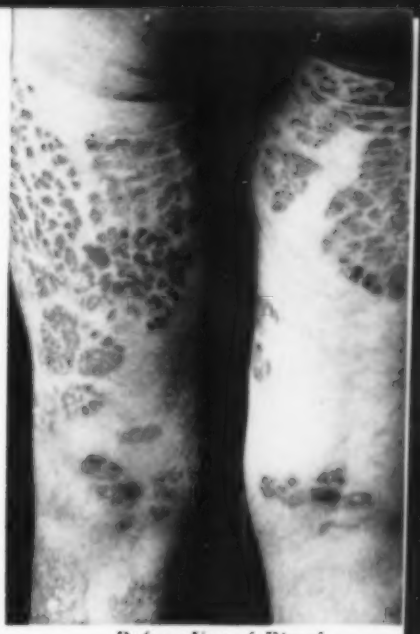
Control of psoriasis by use of RIASOL often makes it possible for young men and women to marry and lead normal lives. This may make the difference between happiness and despondency.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages required. After one week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. bottles at pharmacies or direct.

* Arch. Dermat. & Syph. 35:1051, 1937.



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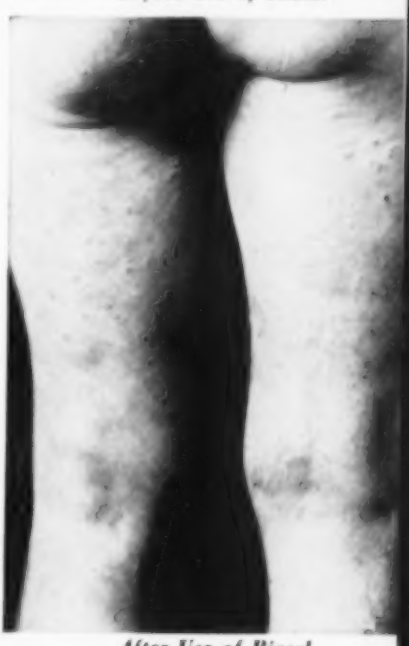

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RIASOL for PSORIASIS

NEWS AND NOTES

—Continued from page 160a

California physicians said today.

Drs. Wrenshall A. Oliver and Harry K. Danielson, Imola, Calif., said in a recent issue of *J.A.M.A.* that this "distortion and disorientation" results when the adolescent is unable to identify himself with other young persons and adults around him.

They said, however, that their experience with a new treatment program for adolescent schizophrenics leads them to hope that the outlook for this age group in general "is not as bad as had previously been supposed"

A specialized program for treating such youngsters was set up at the Napa State Hospital last year, with young patients transferred from adult wards to a cottage housing only adolescents. Group living, and treatment emphasizing social learning seemed to improve them.

The apparent seriousness of the disease in some adolescents has been "startling," the physicians said, but some improvement was seen even in the most serious cases. Slowly the youngsters have begun to develop group ties, and seem better adjusted than they were in the wards. The physicians said some patients have responded "remarkably well," making the outlook for them seem brighter in general.

Child's Unusual Hair Growth May Be Thyroid Symptom

An unusual pattern of excess hair in young children may be a sign of thyroid gland trouble, Dr. William H. Perloff reported in a recent issue of the *Journal of the American Medical Association* stating that he treated four children with unusual hair growth. It disappeared in

—Concluded on page 164a

—Concluded from page 162a

six to eight months after treatment for thyroid deficiency.

The children had extra hair distributed over the back and shoulders to the waist, along the sides of the arms, and on the fronts of the legs, with a slight increase of hair growth on the sides of the face.

Dr. Perloff said the unusual hair growth could be a symptom of deficient activity of the thyroid, since all four children were completely or almost completely relieved by thyroid treatment.

Wire Mesh Replaces Part of Abdominal Wall

A piece of fine wire mesh, made of rare tantalum metal, was used to replace an extensive section of abdominal wall removed by surgery in connection with the removal of a tumor about the size of a grapefruit, two physicians have reported.

The tissue around the mesh healed and grew into it like "the threads of a piece of tapestry," Drs. William Wickman, Miami, and Timothy A. Lamphier, Boston, said.

The tantalum mesh is nonirritating, flexible, easy to work with, and resists infection. The mesh creates strong support in place of missing tissue because the remaining tissue grows into it, they said in a recent issue of *Archives of Surgery*.

They said the technique could be particularly useful in surgery of tumors and cancerous growths where removal must be extensive to prevent recurrence but where strong support is needed to prevent hernia. Their patient was able to go back to work in six months with little after-effect.

for the "squeeze" of g.i. spasm

antispasmodic action virtually without atropinism . . .

through the selective spasmolysis of homatropine methylbromide (one-thirtieth as toxic as atropine) . . . *plus* the sedation of phenobarbital.

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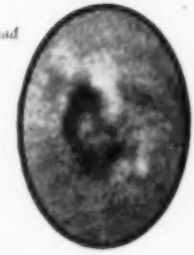
EXPLOSION

OF TRICHOMONADS WITHIN 15 SECONDS OF CONTACT WITH **VAGISEC**

A NEW AGENT, Vagisec, reaches deeply buried and surface trichomonads and explodes them within 15 seconds. No other trichomonacide has this effect.

The Davis technic. Vagisec liquid is the trichomonacide developed as "Carlendacide" by Dr. Carl Henry Davis, well-known gynecologist and author, and C. G. Grand, research physiologist. Over 100 leaders in obstetrics and gynecology tested this new agent, using the Davis technic, and reported "better than 80 per cent of cures among non-pregnant patients with one course of treatment."[1]

1. *Microphotograph (phase-contrast microscope) of a trichomonad*



2. *Trichomonad "exploded" within 15 seconds of contact with Vagisec, diluted as douche*

Synergistic action. Vagisec combines a chelating agent to capture the calcium of the calcium proteinate, a wetting agent to remove lipid material and a detergent to denature the protein. Result, the trichomonad swells up and bursts.

Thorough penetration. Vagisec penetrates the cellular debris and mucoid material lining the vaginal wall and buried between the rugae. It reaches trichomonads, hidden and surface.

Course of treatment. Dr. Davis recommends office treatment and home treatment and the use of both Vagisec liquid and jelly. "For a small percentage of women who have an involvement of cervical, vestibular or urethral glands, other treatment will be required."[1]

Office treatment. Expose vagina with speculum. Wipe walls dry with cotton sponges and wash thoroughly for about three minutes with a 1:250 dilution of Vagisec. Dry with cotton sponges. There is no tampon or messy discharge or staining. Six office treatments are recommended.

Home treatment. Prescribe both Vagisec liquid and Vagisec jelly for home treatment. Patient inserts Vagisec jelly each night and douches with Vagisec (1 teaspoonful to a quart of warm water) each morning except on office treatment days. Treatment continues through two menstrual periods. Four weeks after the course, the douche is omitted at least three days and the patient re-examined. Continued douching with Vagisec two or three times a week helps to prevent re-infection.

Summary. The Davis technic (Vagisec) reaches deeply buried trichomonads and explodes them in 15 seconds. It is a triple attack—office treatment, home treatment with jelly at night, and home treatment with liquid in the morning. Vagisec has been clinically tested and proved fast and effective. It is non-toxic.

1. Davis, C. H.: J.A.M.A., 157:126 (Jan. 8) 1955.

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MEDICAL TIMES, MARCH, 1955

Advertisers' Index

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*Eisfelder, H. W.: Am. Pract. & Dig. Treat., 5:778 (Oct. 1954).

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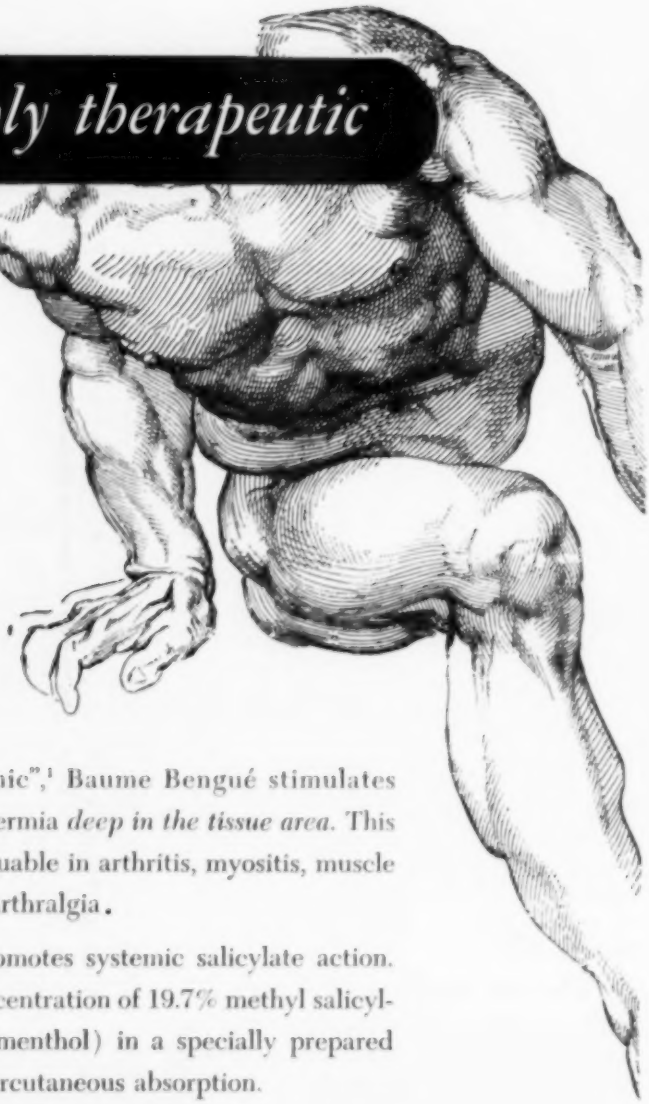

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1. Lange, K., and Weiner, D.: J. Invest. Dermat. 12:263 (May) 1949.

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